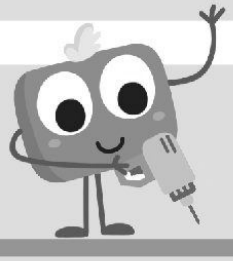


Answer Key
(Step-By-Step Mathematics 4)

Unit 1 Numbers to 100 000

Drills

Exercise 1

30 000 + 7000 + 200 + 45	98 290
40 000 + 8000 + 52	50 309
63 000 + 100 + 80	37 245
50 000 + 300 + 9	21 500
71 000 + 60 + 4	48 052
20 000 + 1000 + 500	14 703
90 000 + 8000 + 200 + 90	63 180
10 000 + 4000 + 700 + 3	71 064
85 000 + 300 + 8	40 060
40 000 + 60	85 308

Exercise 2

1. 43 thousands 15 hundreds 9 tens
   = 43 000 + 1500 + 90
   = **44 590**

2. 11 thousands 50 hundreds 4 tens 76 ones
   = 11 000 + 5000 + 40 + 76
   = **16 116**

3. 26 thousands 23 hundreds 89 ones
   = 26 000 + 2300 + 89
   = **28 389**

4. 15 thousands 45 hundreds 6 tens 9 ones
   = 15 000 + 4500 + 60 + 9
   = **19 569**

5. 9 thousands 54 hundreds 25 tens 67 ones
   = 9000 + 5400 + 250 + 67
   = **14 717**

Exercise 3

1. Fifty-nine thousand, two hundred and ten

2. Twenty thousand, nine hundred and forty-one

3. Nineteen thousand, six hundred and forty-two

4. Ninety-one thousand, four hundred and seventy-seven

5. Twenty-three thousand, five hundred and eighty-three

6. Fifty-eight thousand, two hundred and four

7. Twenty-nine thousand, five hundred and forty-seven

8. Forty-five thousand, two hundred and eighty-four

9. Thirty-nine thousand, two hundred and sixty-one

10. Eighty-nine thousand, nine hundred and eighty-four

Exercise 4

1. 11 413
2. 42 590
3. 70 073
4. 98 630
5. 87 205
6. 15 006
7. 23 011
8. 60 502

Exercise 5

1. (a) 20 567
   (b) 76 520

Exercise 6

1. (a) ten thousands
   (b) 2
2. (a) hundreds
   (b) 70
3. (a) thousands
   (b) 30 000
4. (a) 60
   (b) 3000
5. (a) 6000
   (b) 40 000
6. (a) 20
   (b) 600
7. (a) ones
   (b) 2000
8. (a) ten thousands
   (b) 1000
9. (a) hundreds
   (b) 8000

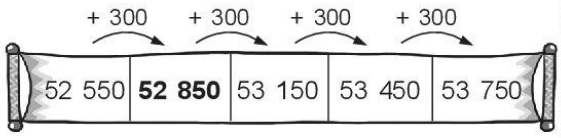
Exercise 7

1. 47 183, 54 137, 54 183, 56 294
2. 10 472, 10 834, 12 851, 18 573
3. 81 094, 81 324, 81, 472, 84 173
4. 6913, 68 215, 69 356, 86 605
5. 43 674, 43 261, 43 092, 34 658
6. 95 362, 92 381, 59 362, 52 369
7. 76 301, 67 301, 30 761, 30 176
8. 49 999, 39 959, 39 925, 9996

Exercise 8

1. + 1000 + 1000 + 1000 + 1000
   32 674 | 33 674 | 34 674 | **35 674** | **36 674**
2. – 2000 – 2000 – 2000 – 2000
   42 756 | 40 756 | **38 756** | 36 756 | **34 756**
3. + 5000 + 5000 + 5000 + 5000
   45 865 | **50 865** | **55 865** | 60 865 | 65 865
4. + 3000 + 3000 + 3000 + 3000
   15 500 | 18 500 | 21 500 | 24 500 | **27 500**
5. – 10 000 – 10 000 – 10 000 – 10 000
   92 760 | 82 760 | **72 760** | **62 760** | 52 760
6. + 100 – 150 + 100 – 150
   19 070 | 19 170 | 19 020 | 19 120 | 18 970
7. + 100 + 100 + 100 + 100
   69 859 | 69 959 | **70 059** | 70 159 | 70 259

8.



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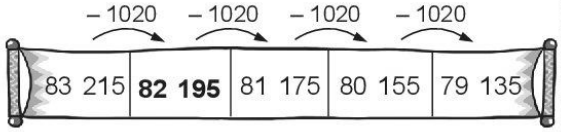

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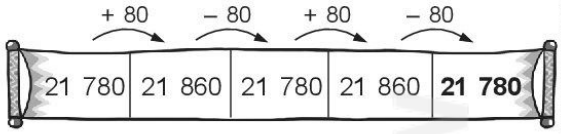

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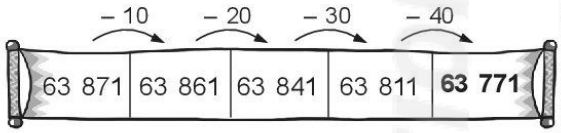

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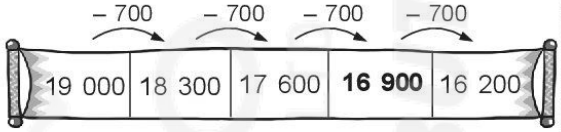

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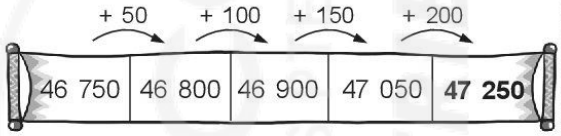

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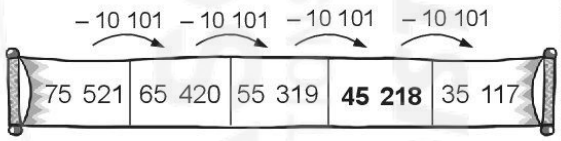


Exercise 9

1. (a) 5370 (b) 2780
   (c) 7430 (d) 28 570
   (e) 64 520 (f) 75 670

2. (a) 6400 (b) 4700
   (c) 5400 (d) 35 400
   (e) 16 300 (f) 58 600

3. (a) 7000 (b) 4000
   (c) 10 000 (d) 11 000
   (e) 16 000 (f) 33 000
   (g) 61 000 (h) 90 000
   (i) 57 000

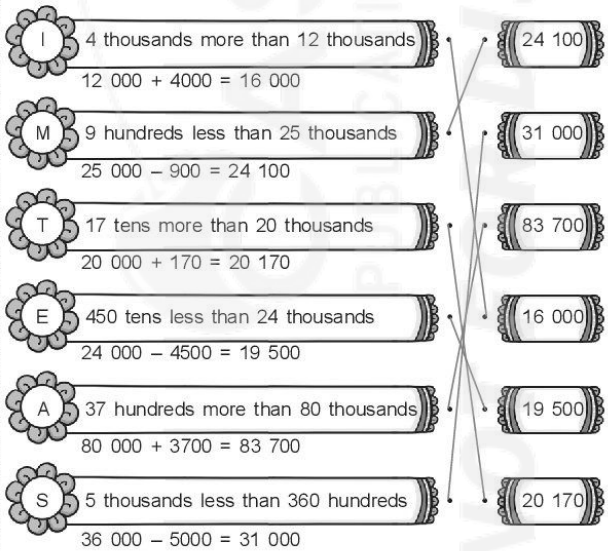
4. (a) 650 + 260 = **910**
   (b) 750 – 220 = **530**
   (c) 860 + 300 = **1160**
   (d) 540 – 350 = **190**
   (e) 6360 + 140 = **6500**
   (f) 9850 – 540 = **9310**

5. (a) 600 + 500 = **1100**
   (b) 800 – 500 = **300**
   (c) 4300 + 300 = **4600**
   (d) 6300 – 400 = **5900**
   (e) 2700 + 2400 = **5100**
   (f) 8500 – 6300 = **2200**

6. (a) 7000 + 3000 = **10 000**
   (b) 6000 – 3000 = **3000**
   (c) 6000 – 2000 = **4000**
   (d) 10 000 + 5000 = **15 000**
   (e) 9000 + 5000 = **14 000**
   (f) 7000 – 6000 = **1000**

Perform

Exercise 1



E	S	T	I	M	A	T	E
19 500	31 000	20 170	16 000	24 100	83 700	20 170	19 500

Exercise 2

1. **(4)**
The value of digit 4 in 43 758 is 40 000.

2. **(2)**

	Value of the digit 8
Option (1): 10 **8**13	800
Option (2): 5**8** 230	8000 (✓)
Option (3): 76 5**8**2	80
Option (4): 90 4**0**8	8

3. **(3)**
63 500 = 63 000 + 500
= 63 thousands and 500 ones

4. **(4)**
13 647 = 10 000 + 3000 + 600 + 40 + 7

5. **(3)**
Twenty-five thousand, five hundred and forty = 25 540

6. **(2)**
135 000 = 1350 hundreds

7. **(2)**
22 999 ≈ 23 000 (nearest ten)

8. **(4)**
18 489 ≈ 18 500 (nearest hundred)

9. **(2)**
59 946 ≈ 60 000 (nearest thousand)

10. **(3)**
Option (1): 3549 ≈ 3500
Option (2): 3595 ≈ 3600
Option (3): 3649 ≈ 3600 (✓)
Option (4): 3656 ≈ 3700

Exercise 3

1. 10 475 + 7492 = 17 967
The value of the digit 9 is **900**.

2. 4351 + 2834 – 1032
≈ 4400 + 2800 – 1000
= **6200**

3. – 1000 – 1000 – 1000 – 1000
41 360, 40 360, 39 360, 38 360, 37 360
The missing number in the number pattern is **38 360**.

4. 35 thousands – 48 hundreds
= 35 000 – 4800
= 30 200

30 200 + 12 thousands
= 30 200 + 12 000
= **42 200**

5. 48 thousands – 45 tens
= 48 000 – 450
= 47 550
≈ **47 600 (nearest hundred)**

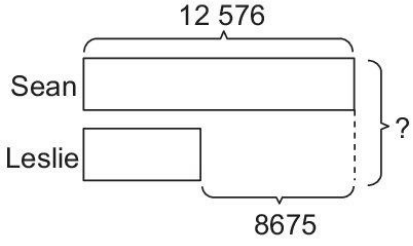
6. Difference
= 200 – 70
= **130**

86 275
Value of digit 2 = 200
Value of digit 7 = 70

Achieve

Exercise 1

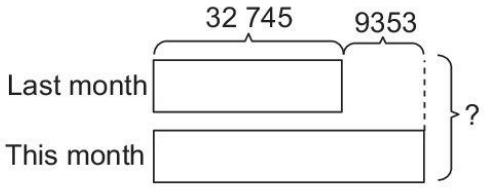
1.



12 576 – 8675 = 3901
12 576 + 3901 = 16 477

They collected **16 477** phonecards altogether.

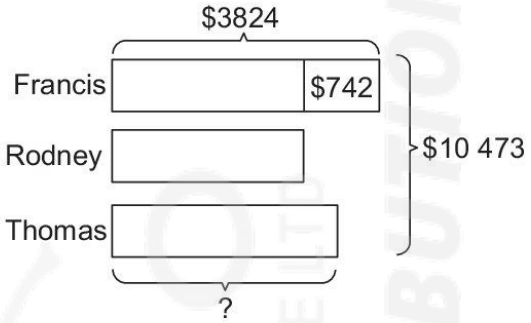
2.



32 745 + 9353 = 42 098
32 745 + 42 098 = 74 843

He sold **74 843** balloons in all.

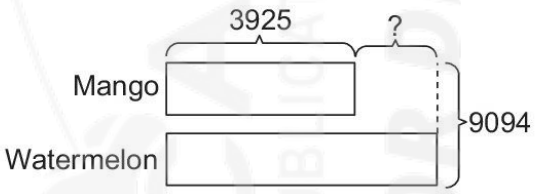
3.



$3824 – $742 = $3082 (Rodney)
$3824 + $3082 = $6906
$10 473 – $6906 = $3567

Thomas saved **$3567**.

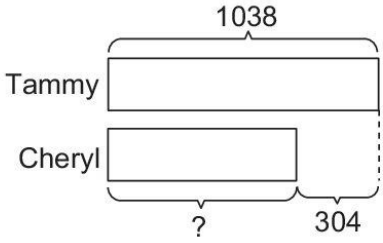
4.



9094 – 3925 = 5169
5169 – 3925 = 1244

There are **1244** more watermelons than mangoes in the plantation.

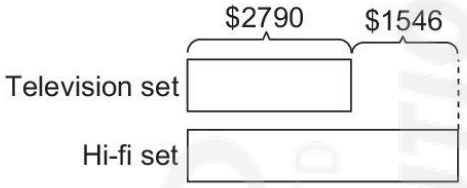
5.



1038 – 304 = 734 (Cheryl)
3025 – 1038 – 734 = 1253

Charmaine had **1253** muffins left.

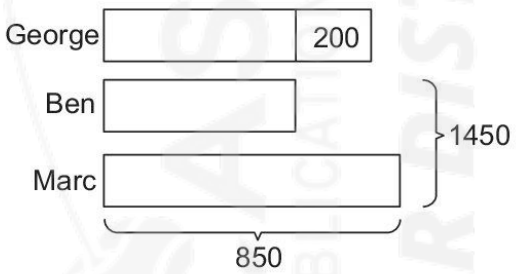
6.



$2790 + $1546 = $4336 (Hi-fi set)
$10 000 – $2790 – $4336 = $2874

He had **$2874** left.

7.



1450 – 850 = 600 (Ben)
600 + 200 = 800 (George)
800 + 1450 = 2250

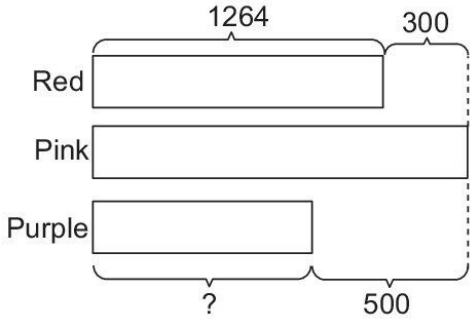
The three boys have **2250** marbles altogether.

8. Work backwards.

200
↓ + 40
240
↓ – 50
190

James had **190** game cards at first.

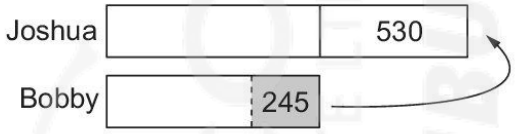
9.



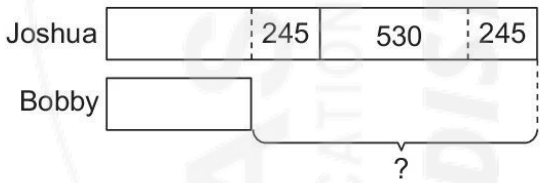
1264 + 300 = 1564 (Pink)
1564 – 500 = 1064 (Purple)

She has **1064** purple beads.

10. At first:



In the end:



245 + 530 + 245 = 1020

Joshua had **1020** more stickers than Bobby in the end.

Challenge

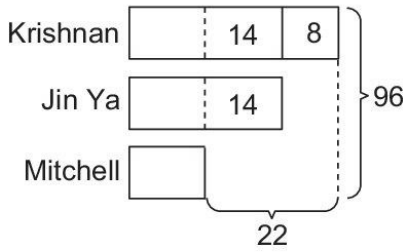
Exercise 1

1. 375 – 80 – 65 – 72 = 158
Monica was left with 158 cookies.

122 + 158 = 280
She had 280 cookies at the end.

280 ÷ 5 = 56
She put **56** cookies in each container.

2.



3 units = 96 – 22 – 14
= 60 stamps
1 unit = 60 ÷ 3
= 20 stamps

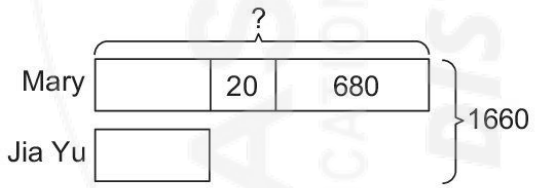
Mitchell had 20 stamps, Jin Ya had (20 + 14 = 34) stamps and Krishnan had (20 + 22 = 42) stamps.

If each of them had the same number of stamps, each of them had (96 ÷ 3 = 32) stamps.

42 – 32 = 10

Krishnan gave Mitchell **10** stamps.

3.



2 units = 1660 – 680 – 20
= 960 tarts
1 unit = 960 ÷ 2
= 480 tarts

480 + 20 + 680 = 1180

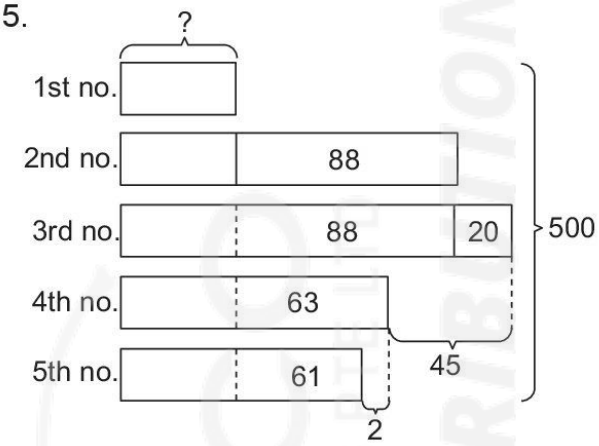
Mary baked **1180** pineapple tarts.

4. Use guess and check.

Number of correct answers	Points awarded	Number of wrong answers	Points deducted	Total number of points	Check
25	25 × 3 = 75	5	5 × 1 = 5	75 – 5 = 70	✗
(24)	24 × 3 = 72	6	6 × 1 = 6	72 – 6 = 66	✓

She answered **24** questions correctly.

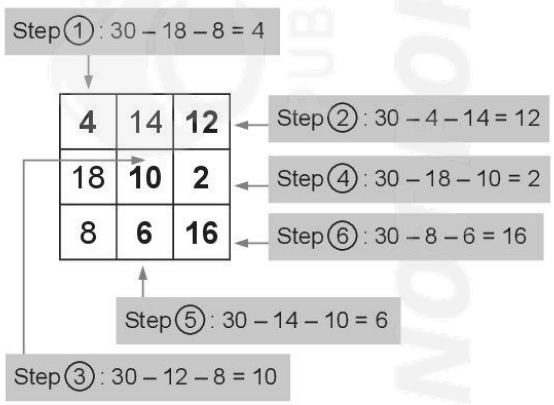
5.



5 units = 500 – 88 – 108 – 63 – 61
= 180
1 unit = 180 ÷ 5
= 36

The first number is **36**.

6.



7.

	No. of passengers
Kovan Station	256
Hougang Station	256 – 145 + 36 = 147
Buangkok Station	147 – 42 + 10 = 115
Sengkang Station	115 – 112 + 28 = 31
Punggol Station	31

31 passengers got on the train at Punggol MRT station.

Unit 2 Factors and Multiples

Drills

Exercise 1

No.	Number	Working	Factors
1.	10	1×10, 2×5	1, 2, 5 and 10
2.	18	1×18, 2×9, 3×6	1, 2, 3, 6, 9 and 18
3.	24	1×24, 2×12, 3×8, 4×6	1, 2, 3, 4, 6, 8, 12 and 24
4.	35	1×35, 5×7	1, 5, 7 and 35
5.	42	1×42, 2×21, 3×14, 6×7	1, 2, 3, 6, 7, 14, 21 and 42
6.	50	1×50, 2×25, 5×10	1, 2, 5, 10, 25 and 50
7.	64	1×64, 2×32, 4×16, 8×8	1, 2, 4, 8, 16, 32 and 64
8.	72	1×72, 2×36, 3×24, 4×18, 6×12, 8×9	1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36 and 72

Exercise 2

No.	Number	Multiples
1.	4	**4, 8, 12, 16, 20, 24, 28, 32, 36, 40**
2.	6	**6, 12, 18, 24, 30, 36, 42, 48, 54, 60**
3.	7	**7, 14, 21, 28, 35, 42, 49, 56, 63, 70**
4.	8	**8, 16, 24, 32, 40, 48, 56, 64, 72, 80**
5.	9	**9, 18, 27, 36, 45, 54, 63, 72, 81, 90**
6.	10	**10, 20, 30, 40, 50, 60, 70, 80, 90, 100**

Exercise 3

No.	Number	6th multiple	8th multiple	9th multiple
1.	3	**18**	**24**	**27**
2.	5	**30**	**40**	**45**
3.	6	**36**	**48**	**54**
4.	7	**42**	**56**	**63**
5.	8	**48**	**64**	**72**

Perform

Exercise 1

No.	Numbers	Working	Factors	Common factors
1.	24	1×24, 2×12, 3×8, 4×6	(1), (2), (3), 4, (6), 8, 12, 24	1, 2, 3 and 6
	30	1×30, 2×15, 3×10, 5×6	(1), (2), (3), 5, (6), 10, 15, 30	
2.	28	1×28, 2×14, 4×7	(1), (2), 4, (7), (14), 28	1, 2, 7 and 14
	42	1×42, 2×21, 3×14, 6×7	(1), (2), 3, 6, (7), (14), 21, 42	
3.	18	1×18, 2×9, 3×6	(1), (2), 3, 6, 9, 18	1 and 2
	40	1×40, 2×20, 4×10, 5×8	(1), (2), 4, 5, 8, 10, 20, 40	
4.	32	1×32, 2×16, 4×8	(1), (2), (4), (8), (16), 32	1, 2, 4, 8 and 16
	48	1×48, 2×24, 3×16, 4×12, 6×8	(1), (2), 3, (4), 6, (8), 12, (16), 24, 48	
5.	27	1×27, 3×9	(1), (3), (9), (27)	1, 3, 9 and 27
	81	1×81, 3×27, 9×9	(1), (3), (9), (27), 81	

Exercise 2

No.	Numbers	Multiples	First common multiple
1.	3	3, 6, (9), 12, 15	9
	9	(9), 18, 27, 36	
2.	4	4, 8, (12), 16	12
	12	(12), 24, 36	
3.	8	8, 16, 24, 32, (40)	40
	10	10, 20, 30, (40)	
4.	7	7, 14, 21, 28, 35, 42, 49, 56, 63, 70, (77)	77
	11	11, 22, 33, 44, 55, 66, (77)	
5.	9	9, 18, 27, (36)	36
	12	12, 24, (36)	
6.	12	12, 24, 36, 48, (60)	60
	15	15, 30, 45, (60)	

Exercise 3

1. **(3)**
Factors of 24: 1, 2, (3), 4, (6), 8, (12), 24

9 is not a factor of 24.

2. **(3)**
Factors of 12: (1), 2, (3), 4, 6, 12
Factors of 15: (1), (3), 5, 15
Common factors of 12 and 15 = 1 and (3)

3 is a common factor of 12 and 15.

3. **(3)**
Multiples of 5: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, (60)
Multiples of 12: 12, 24, 36, 48, (60)

The first common multiple of 5 and 12 is 60.

4. **(2)**
Multiples of 3: 3, 6, 9, 12, (15)
Multiples of 5: 5, 10, (15), 20

15 is a common multiple of 3 and 5.

5. **(4)**
Factors of 20: 1, 2, 4, 5, 10, 20
Sum = 1 + 2 + 4 + 5 + 10 + 20
= 42

6. **(4)**
42 is not a multiple of 4 since it cannot be divided exactly by 4.

Exercise 4

1. Factors of 15: (1), (3), 5, 15
   Factors of 24: (1), 2, (3), 4, 6, 8, 12, 24

   The 2 common factors of 15 and 24 are **1 and 3**.

2. Multiples of 8: 8, 16, (24), 32, 40, (48), 56
   Multiples of 12: 12, (24), 36, (48), 60

   The first 2 common multiples of 8 and 12 are **24 and 48**.

3. Multiples of 2: 2, 4, (6), 8, 10, (12)
   Multiples of 3: 3, (6), 9, (12), 15

   Product = 6×12
   = **72**

4. 4th multiple of 5 = 20
   7th multiple of 6 = 42

   Sum = 20 + 42
   = **62**

5. Factors of 18: 1, 2, 3, (6), (9), 18

   The other two factors of 18 are **6 and 9**.

6. Multiples of 8 between 50 and 80:

   (56), 64, 72

   56 can divided exactly by 7.
   ∴ 7 is a factor of 56.

   I am the number **56**.

Challenge

Exercise 1

1. Multiples of 7 plus 1:
   8, 15, (22), 29, 36, 43, 50, 57, 64, 71, (78)

   Multiples of 8 plus 6:
   14, (22), 30, 38, 46, 54, 62, 70, (78)

   Since it's between from 50 to 80, Joshua has **78** marbles.

2.

Multiples of 4	12	16	20	24	28	32
Sum of 2-digit numbers	1 + 2 = 3	1 + 6 = 7	2 + 0 = 2	2 + 4 = 6	2 + 8 = 10	3 + 2 = 5

   32 = 30 (nearest ten)
   Noryati guessed correctly.

3. Multiples of 4: 4, 8, 12, 16, 20, 24, (28), 32, …
   Multiples of 7: 7, 14, 21, (28), 35, 42, 49, …

   The first customer who will receive both a free bookmark and a free poster is in the **28th** position.

4. Multiples of 9: 9, 18, (27), 36, 45, 54, 63, …

   Multiple of 5

   Multiples of 9 plus 3: 12, 21, (30), 39, 48, 57, 66, …

   Marc is 27 years old now.
   27 + 8 = 35

   He will be **35** years old in 8 years' time.

Unit 3 Multiplication and Division of Whole Numbers

Drills

Exercise 1

1. 17 205
2. 11 670
3. 26 936
4. 40 338
5. 12 138
6. 18 162
7. 19 270
8. 16 384
9. 10 752
10. 23 175
11. 14 205
12. 34 998

Exercise 2

1. 663
2. 875
3. 715
4. 735
5. 318
6. 549
7. 284
8. 395
9. 789
10. 580
11. 897
12. 405

Exercise 3

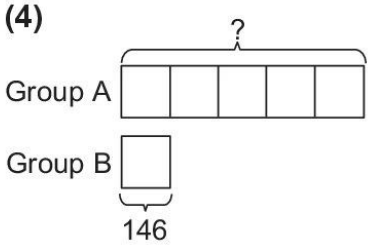
1. 18 050
2. 14 616
3. 9436
4. 12 012
5. 24 448
6. 34 263
7. 6468
8. 7141
9. 9480
10. 62 464
11. 17 668
12. 34 788

Perform

Exercise 1

1. **(1)**
   $702 \div 9 = 78$
   There were 78 erasers in each box.

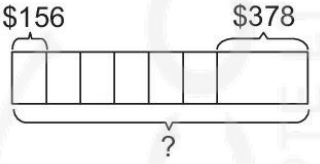
2. **(4)**



$5 \times 146 = 730$
There are 730 boys in Group A.

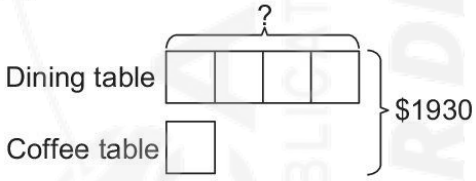
3. **(4)**
   $8 \times 204 = 1632$
   He will deliver 1632 bottles of milk in 8 days.

4. **(4)**



$6 \times \$156 = \$936$
$\$936 + \$378 = \$1314$
He had \$1314 at first.

5. **(3)**



5 units = \$1930
1 unit = $\$1930 \div 5$
= \$386
4 units = $4 \times \$386$
= \$1544
The dining table costs \$1544.

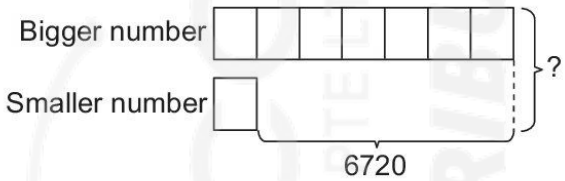
6. **(2)**
   1 kg 575 g = 1575 g
   $1575 \text{ g} \div 7 = 225 \text{ g}$
   There was 225 g of flour in each packet.

7. **(4)**
$7 \times \$19 = \$133$
$2 \times \$1039 = \$2078$
$\$133 + \$2078 = \$2211$
He spent \$2211 altogether.

8. **(2)**
$225 \div 3 = 75$
$75 \times \$7 = \$525$
She paid \$525 altogether.

9. **(3)**
$\$380 \div 5 = \$76$
$12 \times \$76 = \$912$
He paid \$912 for the chairs.

10. **(3)**



6 units = 6720
1 unit = 6720 ÷ 6
= 1120
8 units = 8 × 1120
= 8960
The sum of both numbers is 8960.

Exercise 2

1. $5864 \times 7 =$ **41 048**

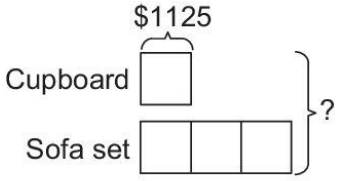
2. 880×6 tens
$= 880 \times 60$
$=$ **52 800**

3. $1205 \times 6 = 7230$
$7230 + 5 = 7235$
The number is **7235**.

4. $12 \times \$358 = \$4296$
She saves **\$4296** in a year.

5. $950 \times \$15 = \$14\ 250$
She got **\$14 250** altogether.

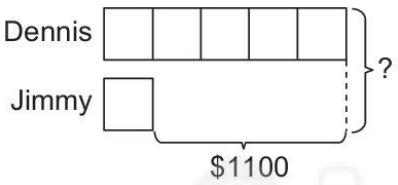
6.



1 unit = \$1125
4 units = 4 × \$1125
= \$4500

The total cost of both items is **\$4500**.

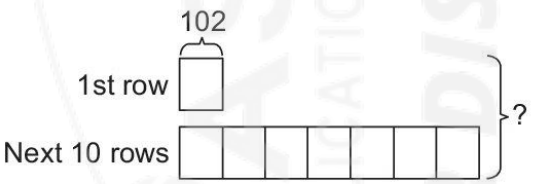
7.



4 units = \$1100
1 unit = \$1100 ÷ 4
= \$275
6 units = 6 × \$275
= \$1650

They saved **\$1650** in all.

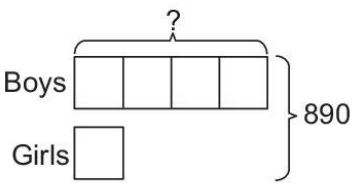
8.



1 unit = 102 people
8 units = 8 × 102
= 816 people

There are **816** people altogether.

9.



5 units = 890 children
1 unit = 890 ÷ 5
= 178 children
4 units = 4 × 178
= 712 children

There are **712** boys.

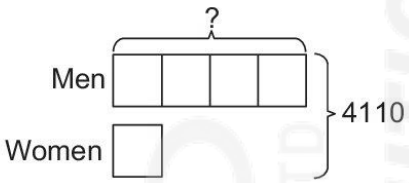
10. 21 × $186 = $3906
$3906 + $3824 = $7730

He spent **$7730** altogether.

Exercise 3

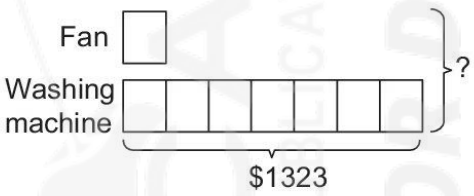
1. 4123 ÷ 7 = 589
The number is **589**.

2. 2988 ÷ 9 = 332
There were **332** stamps in each album.

3. 

5 units = 4110 adults
1 unit = 4110 ÷ 5
= 822 adults
4 units = 4 × 822
= 3288 adults

There are **3288** men.

4. 

7 units = $1323
1 unit = $1323 ÷ 7
= $189

$1323 + $189 = $1512

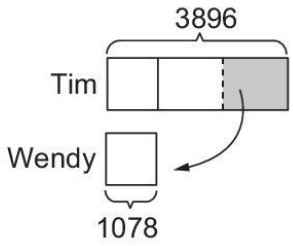
He spent **$1512** altogether.

5. 2034 ÷ 9 = 226
There were **226** stickers in each box.

6. 1120 ÷ 8 = 140
He delivered **140** copies of newspaper each day.

Achieve

Exercise 1

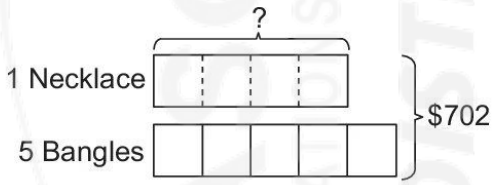
1. 

2 units = 3896 – 1078
= 2818 stamps
1 unit = 2818 ÷ 2
= 1409 stamps

Tim must give **1409** stamps to Wendy.

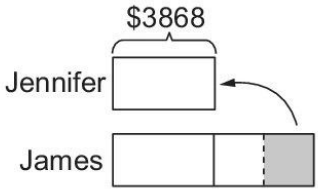
2. 54 × 140 = 7560
7560 ÷ 8 = 945

He got **945** bags of plums.

3. 

9 units = $702
1 unit = $702 ÷ 9
= $78
4 units = 4 × $78
= $312

The necklace costs **$312**.

4. 

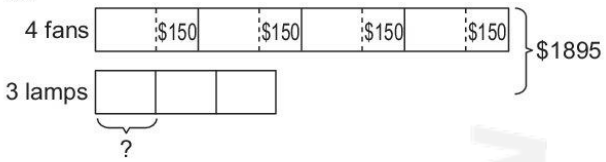
2 units = $3868
1 unit = $3868 ÷ 2
= $1934

James must give **$1934** to Jennifer.

5. $30 \times 96 = 2880$
$3264 - 2880 = 384$
$384 \div 8 = 48$

She got **48** boxes of cookies.

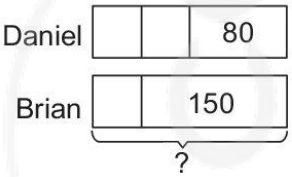
6.



7 units = \$1895 – (4 × \$150)
= \$1895 – \$600
= \$1295
1 unit = \$1295 ÷ 7
= \$185

A lamp costs **\$185**.

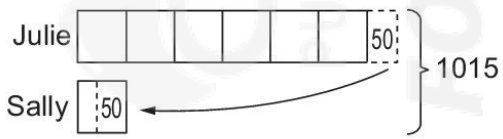
7.



1 unit = 150 – 80
= 70 phonecards
70 + 150 = 220

Brian had **220** phonecards in the beginning.

8.

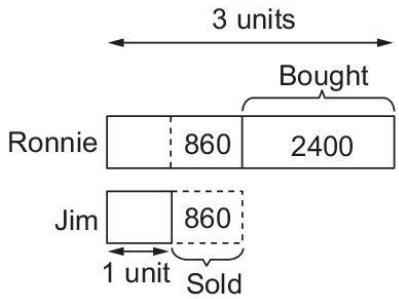


7 units = 1015 seashells
1 unit = 1015 ÷ 7
= 145 seashells
6 units = 6 × 145
= 870 seashells

870 + 50 = 920 seashells (Julie)
145 – 50 = 95 seashells (Sally)

Julie had **920** seashells and Sally had **95** seashells in the beginning.

9. After:

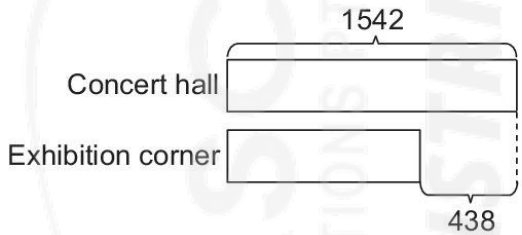


3 units – 1 unit = 2 units
2 units = 860 + 2400
= 3260 postcards
1 unit = 3260 ÷ 2
= 1630 postcards

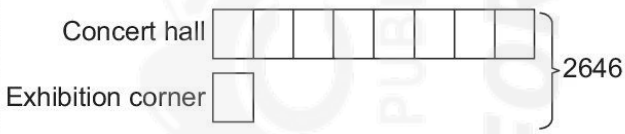
1630 + 860 = 2490

Each of them had **2490** postcards at first.

10.



1542 – 438 = 1104 (Exhibition corner)
1542 + 1104 = 2646

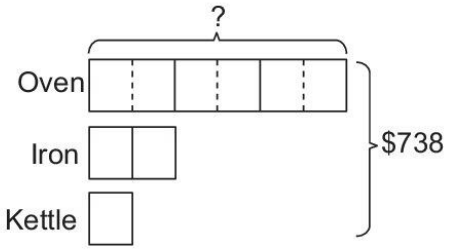


9 units = 2646 boys
1 unit = 2646 ÷ 9
= 294 boys

1104 – 294 = 810

810 boys must leave the exhibition corner and go to the concert hall.

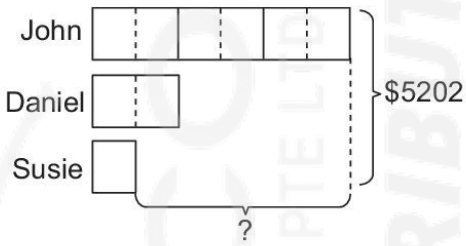
11.



9 units = $738
1 unit = $738 ÷ 9
= $82
6 units = 6 × $82
= $492

The oven costs **$492**.

12.



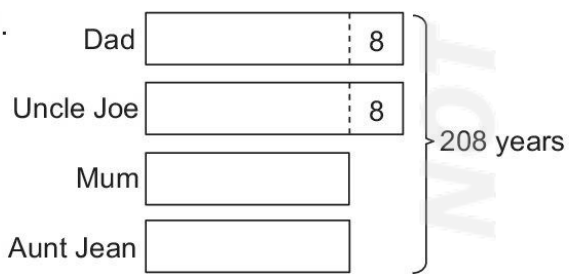
9 units = $5202
1 unit = $5202 ÷ 9
= $578
5 units = 5 × $578
= $2890

John spent **$2890** more than Susie.

Challenge

Exercise 1

1.

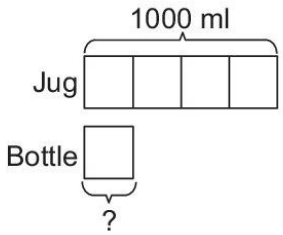


4 units = 208 – 8 – 8
= 192 years
1 unit = 192 ÷ 4
= 48 years

Mum is 48 years old.

48 ÷ 6 = 8
I am **8** years old.

2. 850 ml + 150 ml = 1000 ml
In the end:



4 units = 1000 ml
1 unit = 1000 ml ÷ 4
= 250 ml

250 ml + 150 ml = 400 ml

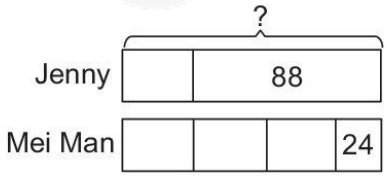
Charlotte made **400 ml** of barley drink in the bottle at first.

3. Use guess and check.

Number of boys	Number of nuggets eaten by the boys	Number of girls	Number of nuggets eaten by the girls	Difference	Check
11	11 × 5 = 55	7	7 × 3 = 21	55 – 21 = 34	✗
12	12 × 5 = 60	6	6 × 3 = 18	60 – 18 = 42	✓

12 – 6 = 6
6 more boys than girls attended Henry's birthday party.

4.



2 units = 88 – 24
= 64 tarts
1 unit = 64 ÷ 2
= 32 tarts

32 + 88 = 120

Each of them baked **120** peach tarts at first.

5. 380 – 35 – 23 = 322
Shanti had 322 stamps left after giving some to her siblings.

322 + 78 = 400
Shanti had 400 stamps in the end.

400 ÷ 8 = 50

She should put **50** stamps into each album.

6. Use guess and check.

Number of $2 notes	Value of $2 notes	Number of $10 notes	Value of $10 notes	Total value	Check
13	13 × $2 = $26	6	6 × $10 = $60	$26 + $60 = $86	✗
14	14 × $2 = $28	(5)	5 × $10 = $50	$28 + $50 = $78	✓

There were **5** ten-dollar notes.

Unit 4 Angles, Squares and Rectangles

Drills

Exercise 1

1. $\angle a = 131°$
2. $\angle b = 51°$
3. $\angle c = 19°$
4. $\angle d = 53°$
5. $\angle e = 35°$
6. $\angle f = 9°$
7. $\angle g = 111°$
8. $\angle h = 109°$
9. $\angle i = 130°$
10. $\angle j = 65°$
11. $\angle k = 148°$
12. $\angle l = 127°$
13. $\angle m = 90°$
14. $\angle n = 25°$

Exercise 2

1. 55°
2. 40°
3. 45°
4. 22°
5. 15°
6. 61°
7. 40°
8. 33°
9. 25°
10. 23°
11. 15°
12. 45°

Exercise 3

1. 47°
2. 52°
3. 64°
4. 45°
5. 19°
6. 55°
7. 39°
8. 38°
9. 25°
10. 42°
11. 30°
12. 29°

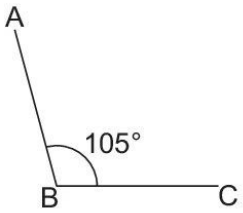
Exercise 4

1. north-east
2. south
3. east
4. A
5. D
6. C / D
7. north-west

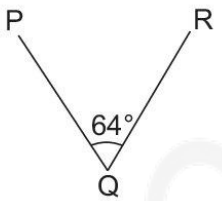
Perform

Exercise 1

1.



2.



Exercise 2

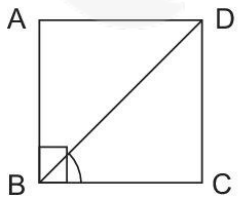
1. 270°

2. 180°

3. $\angle n = 90° - 68°$
   $= 22°$
   Difference $= \angle m - \angle n$
   $= 68° - 22°$
   $=$ **46°**

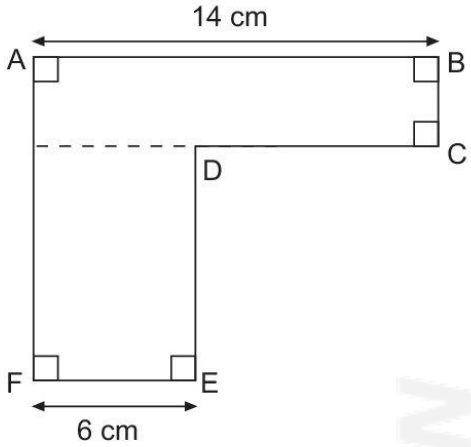
4. 8 cm

5.



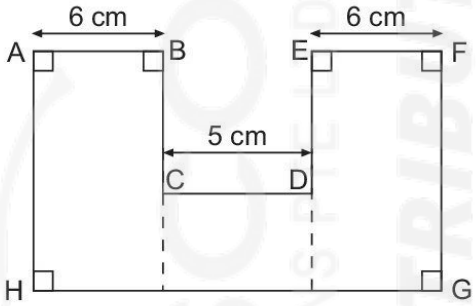
   $\angle ABC = 90°$ ($\angle$s of a square)
   $\angle CBD = 90° \div 2$ (BD cuts the square
   $=$ **45°** into half)

6.



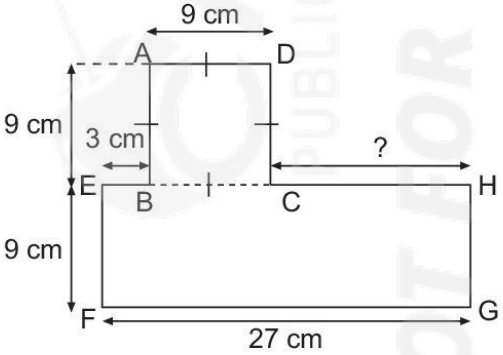
   CD = 14 cm – 6 cm
   = **8 cm**

7.



   GH = 6 cm + 5 cm + 6 cm
   = **17 cm**

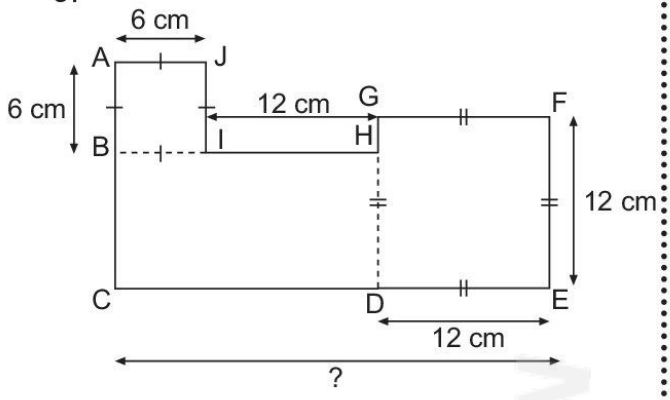
8.



   AD = AB (sides of a square)
   = 9 cm

   CH = 27 cm – 3 cm – 9 cm
   = **15 cm**

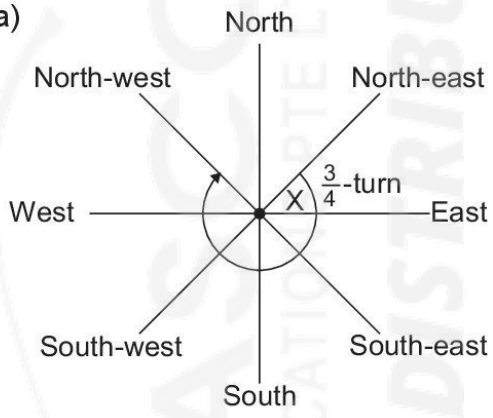
9.



CE = 6 cm + 12 cm + 12 cm
= **30 cm**

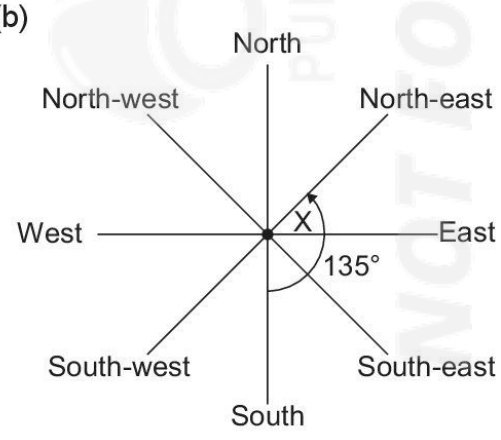
Exercise 3

1. (a)



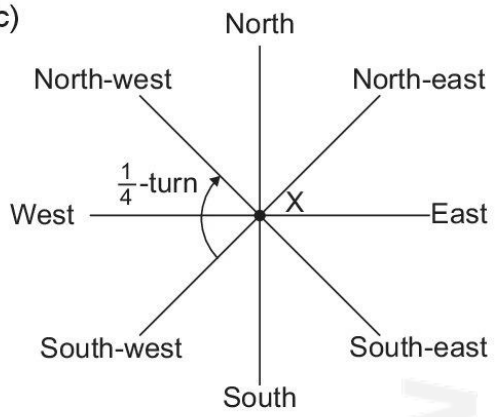
He will be facing **north-west**.

(b)



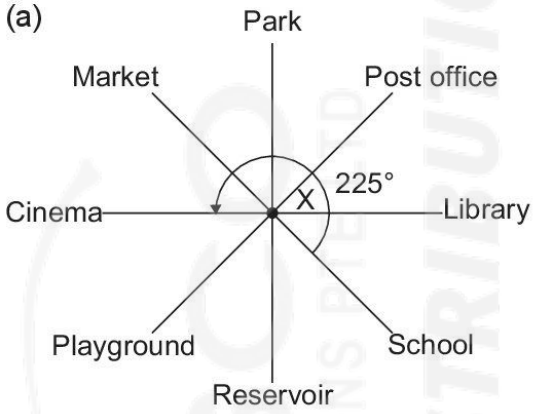
She will be facing **north-east**.

(c)



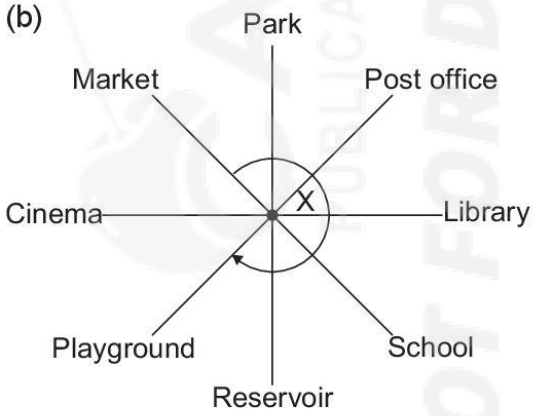
He will be facing **north-west**.

2. (a)



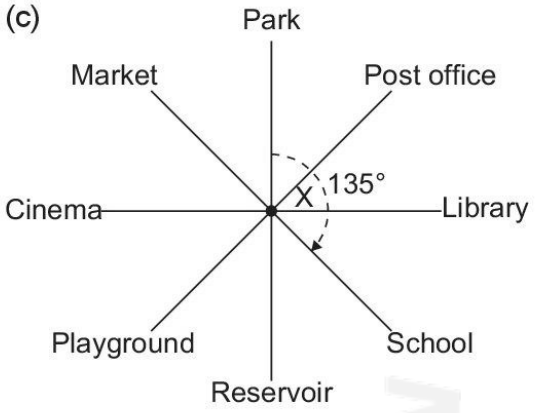
He will face the **cinema**.

(b)



She will face the **playground**.

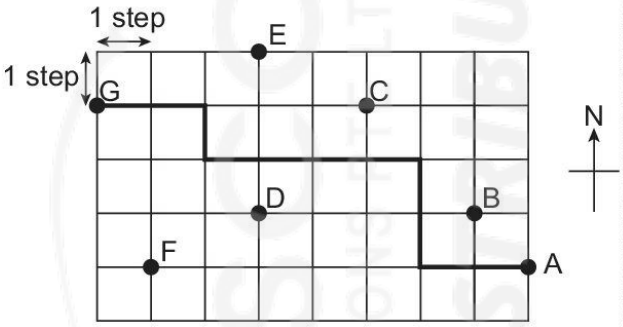
(c)



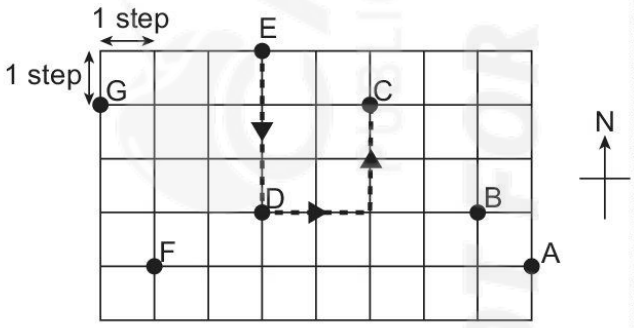
He was facing the **school** at first.

Exercise 4

1. Answer may vary.



2. Work backwards.



She was standing at point **C** at first.

Achieve

Exercise 1

1. $\angle x + 18° = 90° \div 2$
   $\angle x + 18° = 45°$
   $\angle x = 45° - 18°$
   $= \mathbf{27°}$

2. $90° - 52° = 38°$
   $\angle x = 38° \div 2$
   $= \mathbf{19°}$

3. $90° - 42° = 48°$
   $\angle x = 48° \div 2$
   $= \mathbf{24°}$

4. $90° \div 2 = 45°$
   $\angle x = 45° - 30°$
   $= \mathbf{15°}$

Exercise 2

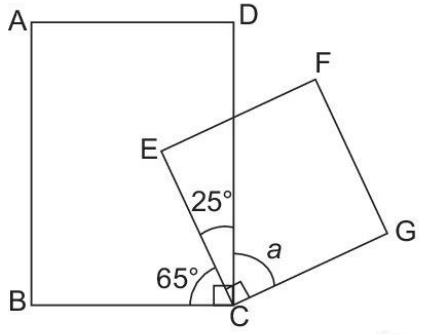
1. $\angle x = 90° \div 3$
   $= \mathbf{30°}$

2. $90° - 38° - 26° = 26°$
   $\angle x = 26° \div 2$
   $= \mathbf{13°}$

3. $90° - 60° = 30°$
   $\angle x = 30° \div 2$
   $= \mathbf{15°}$

4. $90° - 30° = 60°$
   $\angle x = 60° \div 3$
   $= \mathbf{20°}$

Exercise 3



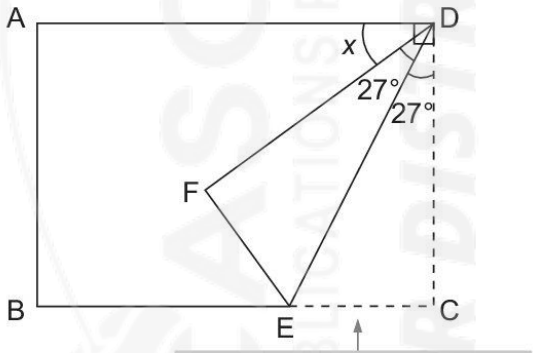
1. $\angle BCD = 90°$ ($\angle$s of a rectangle)

   $\angle DCE = 90° - 65°$
   $= 25°$

   $\angle ECG = 90°$ ($\angle$s of a square)

   $\angle a = 90° - 25°$
   $= \mathbf{65°}$

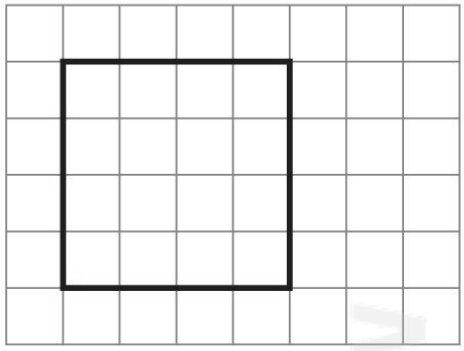
2.



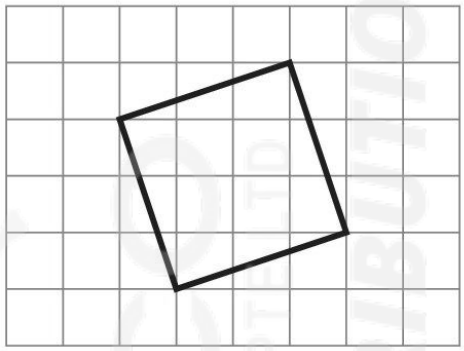
   $\angle ADC = 90°$ ($\angle$s of a rectangle)
   $\angle CDE = \angle FDE$
   $= 27°$
   $\angle x = 90° - 27° - 27°$
   $= \mathbf{36°}$

Exercise 4

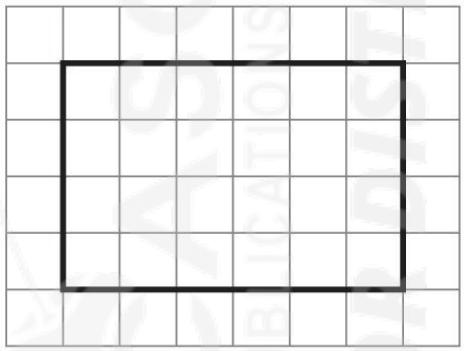
1. (a)



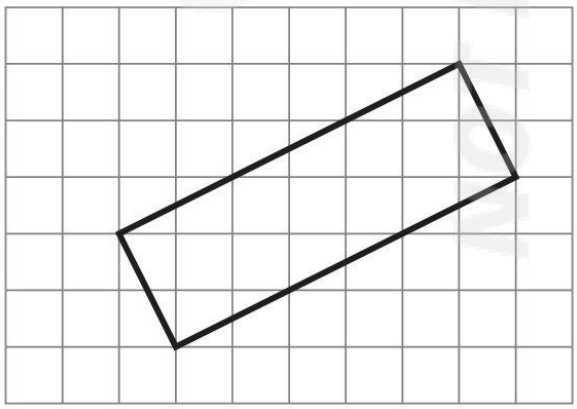
(b)



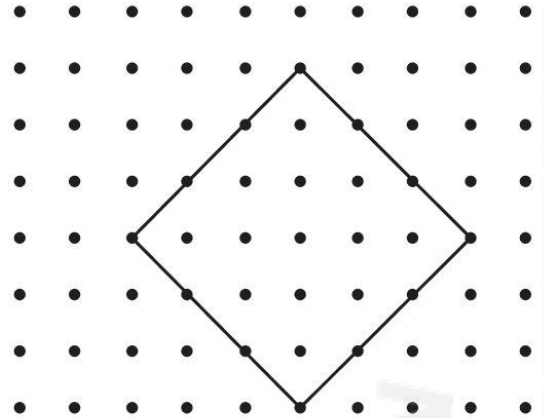
2. (a)



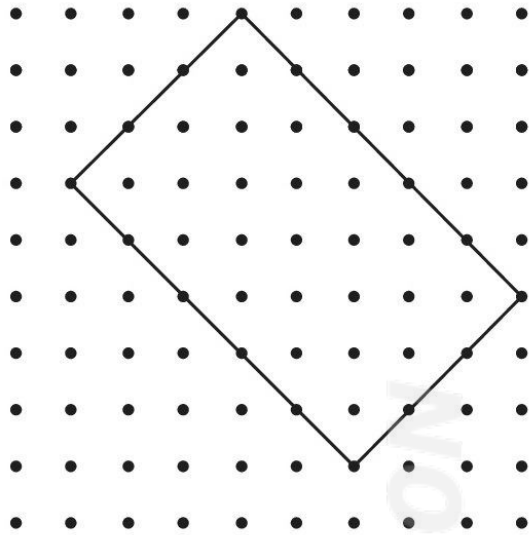
(b)



3.



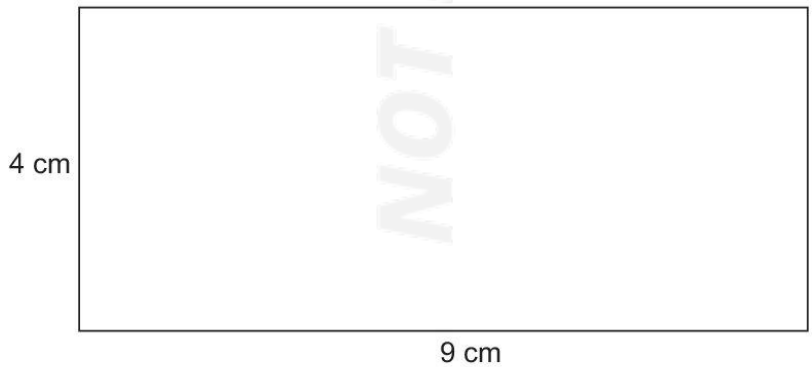
4.



Exercise 5

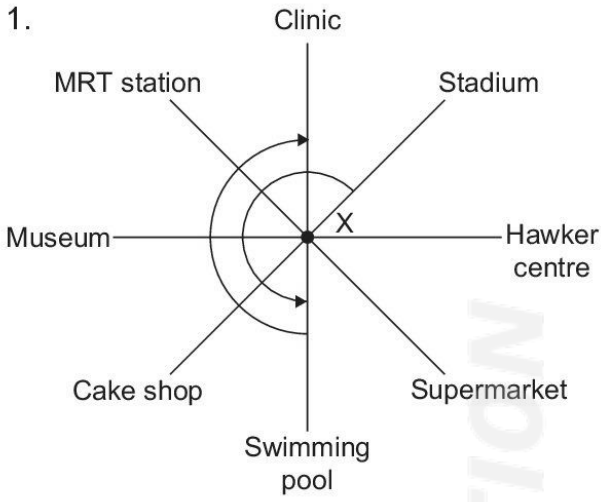
1.

2.



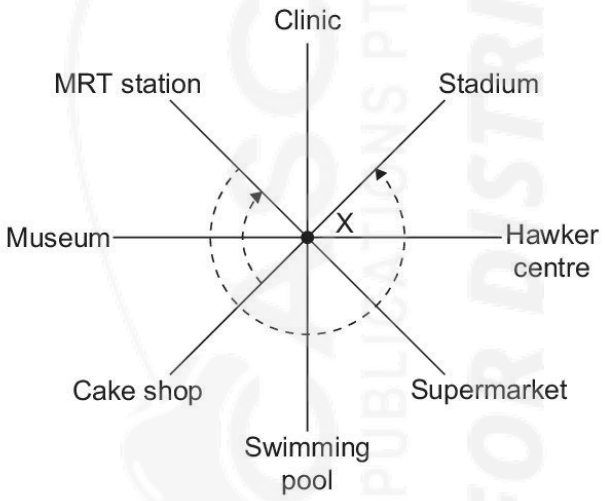
Exercise 6

1.



She will be facing the **clinic** in the end.

2. Word backwards.



He was facing the **stadium** at first.

Exercise 7

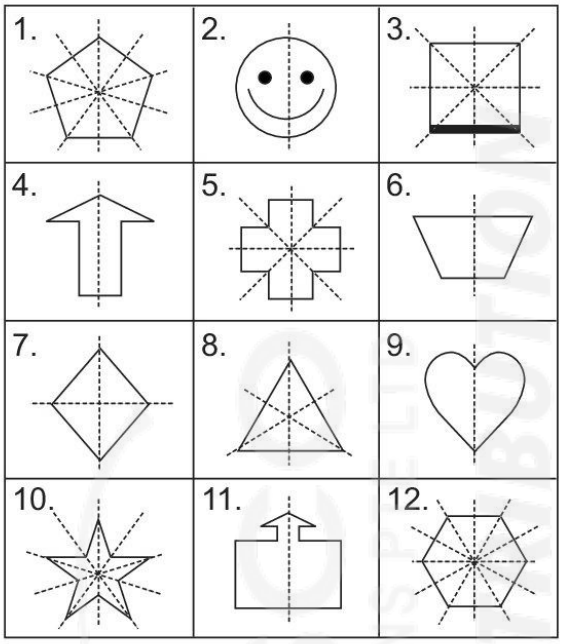
1. 2 steps to the north, then 2 steps to the east, then 2 steps to the north and 4 steps to the south.

2. Jean (Mark (✗) at Jean.)

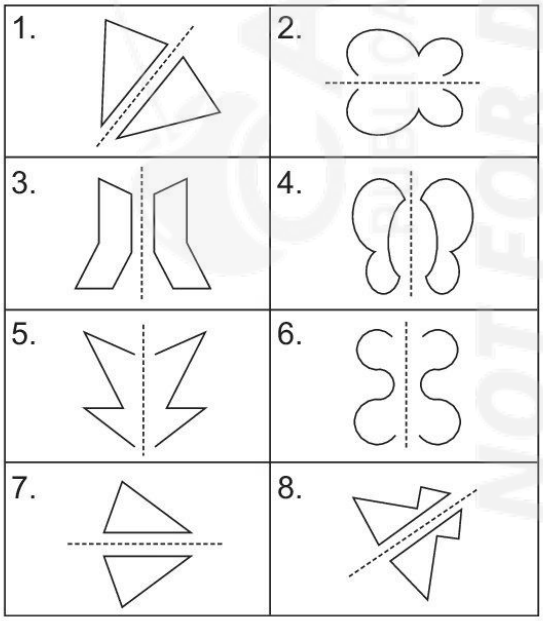
Unit 5 Symmetry

Drills

Exercise 1



Exercise 2



Perform

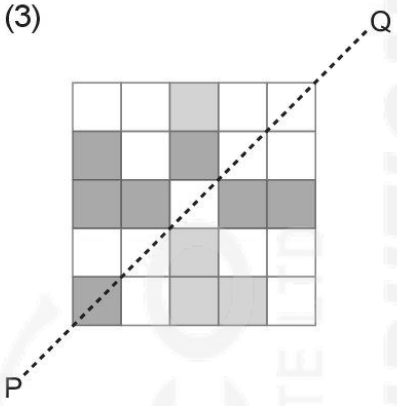
Exercise 1

1. (3)

2. (3)

3. (4)

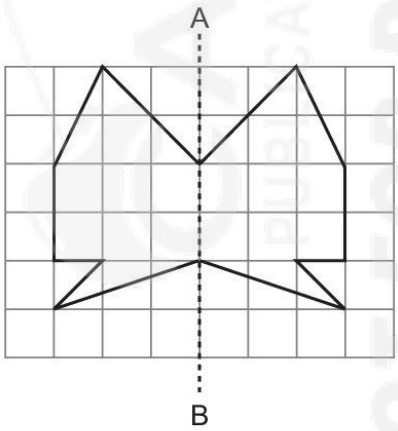
4. (3)



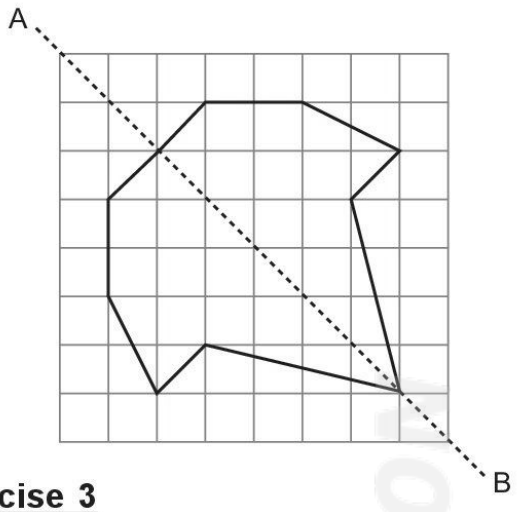
4 more squares must be shaded.

Exercise 2

1.

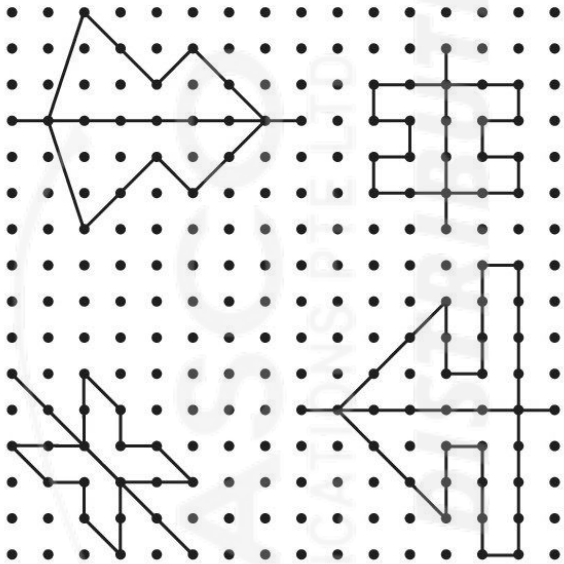


2.



Exercise 3

1.



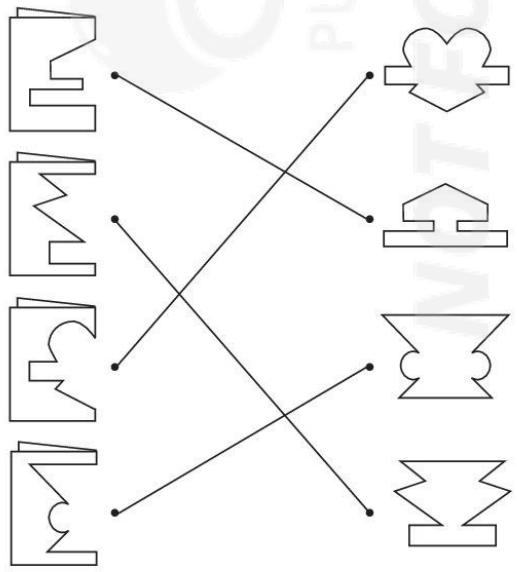
Exercise 4

1.

2.

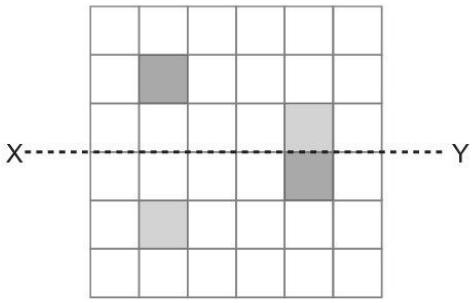
3.

4.

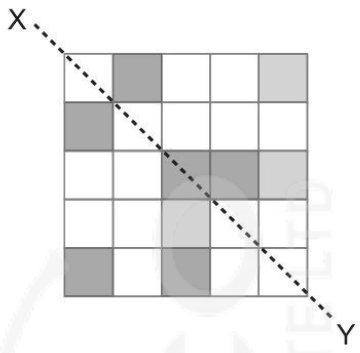


Exercise 5

1.



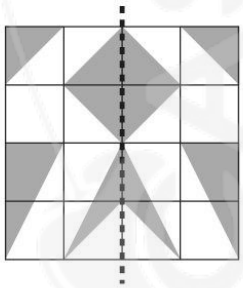
2.



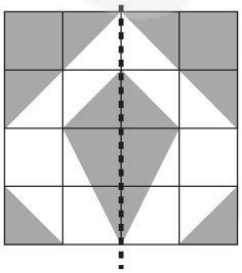
Achieve

Exercise 1

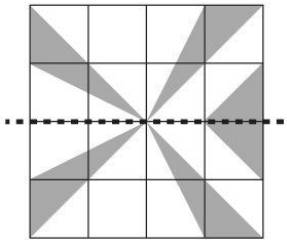
1.



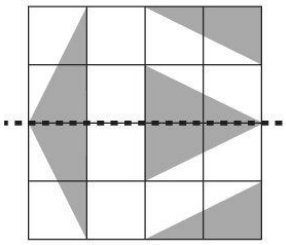
2.



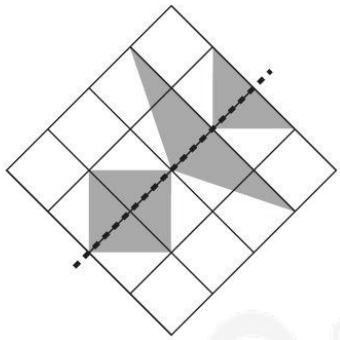
3.



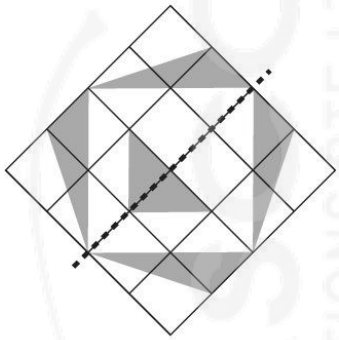
4.



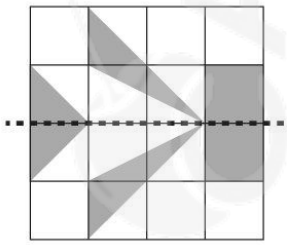
5.



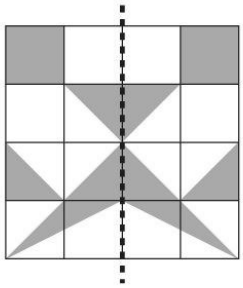
6.



7.



8.



Unit 6 Fractions

Drills

Exercise 1

+	$\frac{1}{2}$	$\frac{3}{5}$	$\frac{1}{5}$	$\frac{1}{2}$	$\frac{2}{5}$	$\frac{3}{4}$	$\frac{1}{10}$
$\frac{4}{5}$	$1\frac{3}{10}$	$1\frac{2}{5}$	1	$1\frac{3}{10}$	$1\frac{1}{5}$	$1\frac{11}{20}$	$\frac{9}{10}$
$\frac{1}{10}$	$\frac{3}{5}$	$\frac{7}{10}$	$\frac{3}{10}$	$\frac{3}{5}$	$\frac{1}{2}$	$\frac{17}{20}$	$\frac{1}{5}$
$\frac{2}{5}$	$\frac{9}{10}$	1	$\frac{3}{5}$	$\frac{9}{10}$	$\frac{4}{5}$	$1\frac{3}{20}$	$\frac{1}{2}$
$\frac{7}{10}$	$1\frac{1}{5}$	$1\frac{3}{10}$	$\frac{9}{10}$	$1\frac{1}{5}$	$1\frac{1}{10}$	$1\frac{9}{20}$	$\frac{4}{5}$
$\frac{1}{8}$	$\frac{5}{8}$	$\frac{29}{40}$	$\frac{13}{40}$	$\frac{5}{8}$	$\frac{21}{40}$	$\frac{7}{8}$	$\frac{9}{40}$
$\frac{1}{5}$	$\frac{7}{10}$	$\frac{4}{5}$	$\frac{2}{5}$	$\frac{7}{10}$	$\frac{3}{5}$	$\frac{19}{20}$	$\frac{3}{10}$
$\frac{1}{4}$	$\frac{3}{4}$	$\frac{17}{20}$	$\frac{9}{20}$	$\frac{3}{4}$	$\frac{13}{20}$	1	$\frac{7}{20}$

Exercise 2

1. $1\frac{1}{2}$
2. $2\frac{1}{4}$
3. $3\frac{3}{4}$
4. $1\frac{1}{3}$, $1\frac{2}{3}$
5. $1\frac{1}{2}$, $2\frac{1}{4}$

Exercise 3

1. $6\frac{1}{3} + \frac{2}{3} = 6\frac{3}{3}$
   $= 7$

2. $10 - \frac{7}{10} = 9\frac{10}{10} - \frac{7}{10}$
   $= 9\frac{3}{10}$

3. $2\frac{1}{2} + \frac{1}{6} = 2\frac{3}{6} + \frac{1}{6}$
   $= 2\frac{4}{6}$
   $= 2\frac{2}{3}$

4. $4\frac{2}{3} + 3\frac{1}{6} = 4\frac{4}{6} + 3\frac{1}{6}$
   $= 7\frac{5}{6}$

5. $2 - \frac{3}{4} - \frac{1}{8} = 1\frac{8}{8} - \frac{6}{8} - \frac{1}{8}$
   $= 1\frac{1}{8}$

6. $8\frac{7}{10} - 2\frac{2}{5} = 8\frac{7}{10} - 2\frac{4}{10}$
   $= 6\frac{3}{10}$

7. $5\frac{2}{9} + 2\frac{2}{3} = 5\frac{2}{9} + 2\frac{6}{9}$
   $= 7\frac{8}{9}$

8. $7\frac{4}{6} - 1\frac{4}{9} = 7\frac{12}{18} - 1\frac{8}{18}$
   $= 6\frac{4}{18}$
   $= 6\frac{2}{9}$

9. $9\frac{3}{4} - 6\frac{3}{8} = 9\frac{6}{8} - 6\frac{3}{8}$

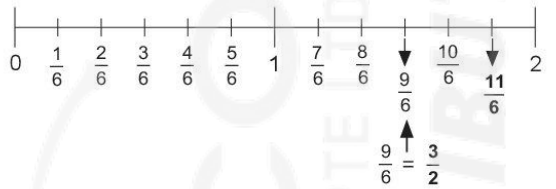
$= \mathbf{3\frac{3}{8}}$

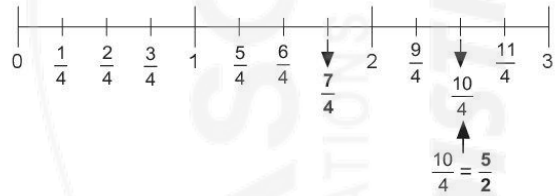
Exercise 4

1. $\frac{3}{2}$

2. $\frac{11}{4}$

3. $\frac{13}{4}$

4. 

5. 

Exercise 5

1. $\frac{17}{6}$

2. $\frac{59}{8}$

3. $\frac{19}{5}$

4. $\frac{87}{10}$

5. $\frac{37}{6}$

Exercise 6

1. 6

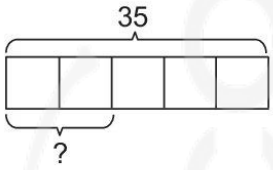
2. $4\frac{3}{8}$

3. $6\frac{1}{4}$

4. $6\frac{6}{7}$

5. $7\frac{3}{7}$

Exercise 7

1. 

5 units = 35

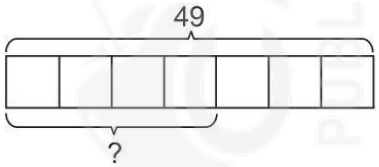
1 unit = 35 ÷ 5

= 7

2 units = 2 × 7

= 14

$\frac{2}{5}$ of 35 is **14**.

2. 

7 units = 49

1 unit = 49 ÷ 7

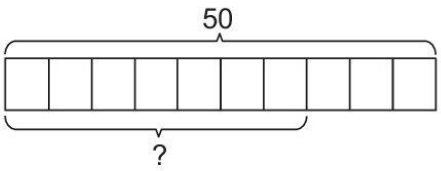
= 7

4 units = 4 × 7

= 28

$\frac{4}{7}$ of 49 is **28**.

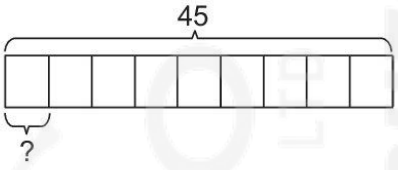
3.



10 units = 50
1 unit = 50 ÷ 10
= 5
7 units = 7 × 5
= 35

$\frac{7}{10}$ of 50 is **35**.

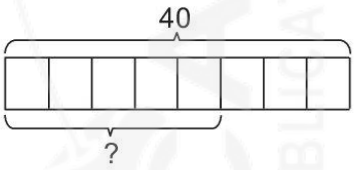
4.



9 units = 45
1 unit = 45 ÷ 9
= 5

$\frac{1}{9}$ of 45 is **5**.

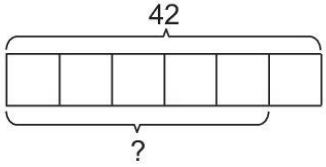
5.



8 units = 40
1 unit = 40 ÷ 8
= 5
5 units = 5 × 5
= 25

$\frac{5}{8}$ of 40 is **25**.

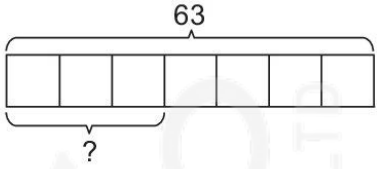
6.



6 units = 42
1 unit = 42 ÷ 6
= 7
5 units = 5 × 7
= 35

$\frac{5}{6}$ of 42 is **35**.

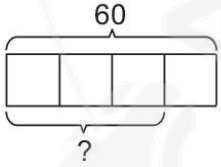
7.



7 units = 63
1 unit = 63 ÷ 7
= 9
3 units = 3 × 9
= 27

$\frac{3}{7}$ of 63 is **27**.

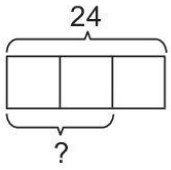
8.



4 units = 60
1 unit = 60 ÷ 4
= 15
3 units = 3 × 15
= 45

$\frac{3}{4}$ of 60 is **45**.

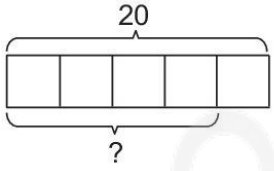
9.



3 units = 24
1 unit = 24 ÷ 3
= 8
2 units = 2 × 8
= 16

$\frac{2}{3}$ of 24 is **16**.

10.



5 units = 20
1 unit = 20 ÷ 5
= 4
4 units = 4 × 4
= 16

$\frac{4}{5}$ of 20 is **16**.

Perform

Exercise 1

1. **(4)**

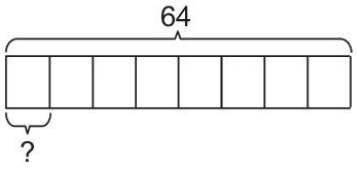
$2\frac{2}{3} = \frac{8}{3}$

There are 8 thirds in $2\frac{2}{3}$.

2. **(1)**

$\frac{28}{9} = 3\frac{1}{9}$

3. **(2)**



8 units = 64
1 unit = 64 ÷ 8
= 8

$\frac{1}{8}$ of 64 is 8.

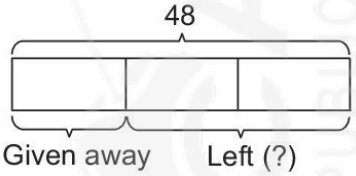
4. **(1)**

$\frac{11}{12} - \frac{5}{6} = \frac{11}{12} - \frac{10}{12}$
$= \frac{1}{12}$

5. **(4)**

$4\frac{2}{5} + 1\frac{1}{10} = 4\frac{4}{10} + 1\frac{1}{10}$
$= 5\frac{5}{10}$
$= 5\frac{1}{2}$

6. **(2)**



3 units = 48 stamps
1 unit = 48 ÷ 3
= 16 stamps
2 units = 2 × 16
= 32 stamps

He had 32 stamps left.

Exercise 2

1. $\frac{3}{4} - \frac{1}{8} = \frac{6}{8} - \frac{1}{8}$

$= \frac{5}{8}$

$\frac{5}{8} + \frac{1}{5} = \frac{25}{40} + \frac{8}{40}$

$= \mathbf{\frac{33}{40}}$

2. $\frac{3}{5} - \frac{1}{10} = \frac{6}{10} - \frac{1}{10}$

$= \frac{5}{10}$

$= \mathbf{\frac{1}{2}}$

3. $\frac{1}{5} + \frac{1}{10} + \frac{4}{5}$

$= \frac{2}{10} + \frac{1}{10} + \frac{8}{10}$

$= \frac{11}{10}$

$= \mathbf{1\frac{1}{10}}$

4. $\frac{1}{4} + \frac{1}{3} + \frac{1}{6}$

$= \frac{3}{12} + \frac{4}{12} + \frac{2}{12}$

$= \frac{9}{12}$

$= \mathbf{\frac{3}{4}}$

5. $\frac{1}{4} + \frac{1}{2} = \frac{1}{4} + \frac{2}{4}$

$= \frac{3}{4}$

$\frac{3}{4} - \frac{1}{8} = \frac{6}{8} - \frac{1}{8}$

$= \mathbf{\frac{5}{8}}$

6. $\frac{5}{8} - \frac{1}{2} = \frac{5}{8} - \frac{4}{8}$

$= \frac{1}{8}$

The fraction is $\mathbf{\frac{1}{8}}$.

7. $\frac{7}{12} - \frac{1}{2} = \frac{7}{12} - \frac{6}{12}$

$= \frac{1}{12}$

The fraction is $\mathbf{\frac{1}{12}}$.

8. $\frac{2}{5} + \frac{7}{10} = \frac{4}{10} + \frac{7}{10}$

$= \frac{11}{10}$

$\frac{11}{10} - \frac{1}{2} = \frac{11}{10} - \frac{5}{10}$

$= \frac{6}{10}$

$= \mathbf{\frac{3}{5}}$

9. $2 - \frac{5}{12}$

$= 1\frac{12}{12} - \frac{5}{12}$

$= \mathbf{1\frac{7}{12}}$

10. $\frac{1}{10} + \frac{1}{5}$

$= \frac{1}{10} + \frac{2}{10}$

$= \frac{3}{10}$

The fraction is $\mathbf{\frac{3}{10}}$.

11. $1 - \frac{4}{9} - \frac{1}{3}$

$= \frac{9}{9} - \frac{4}{9} - \frac{3}{9}$

$= \frac{2}{9}$

He had $\mathbf{\frac{2}{9}}$ of the paint left.

12. $1 - \frac{1}{5} - \frac{3}{10}$

$= \frac{10}{10} - \frac{2}{10} - \frac{3}{10}$

$= \frac{5}{10}$

$= \frac{1}{2}$

$\mathbf{\frac{1}{2}}$ of that pizza was left.

13. $1 - \frac{1}{9} - \frac{1}{9}$

$= \frac{9}{9} - \frac{1}{9} - \frac{1}{9}$

$= \frac{7}{9}$

$\mathbf{\frac{7}{9}}$ of the chocolate cake was left.

Exercise 3

1. $9 - \frac{5}{8} = 8\frac{8}{8} - \frac{5}{8}$

$= 8\frac{3}{8}$

$8\frac{3}{8} + \frac{1}{4} = 8\frac{3}{8} + \frac{2}{8}$

$= \mathbf{8\frac{5}{8}}$

2. $4\frac{5}{9} = \mathbf{\frac{41}{9}}$

3. $7 + \frac{4}{5} = 7\frac{4}{5}$

$7\frac{4}{5} - \frac{2}{5} = \mathbf{7\frac{2}{5}}$

4. $\frac{57}{7} = \mathbf{8\frac{1}{7}}$

5. $\frac{2}{5} + \frac{1}{10} = \frac{4}{10} + \frac{1}{10}$

$= \frac{5}{10}$

$\frac{5}{10} + \frac{3}{5} = \frac{5}{10} + \frac{6}{10}$

$= \frac{11}{10}$

$= \mathbf{1\frac{1}{10}}$

6. $6\frac{2}{9} = \mathbf{\frac{56}{9}}$

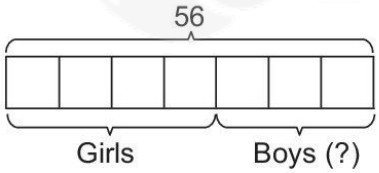
7. $5\frac{4}{9} + 1\frac{1}{9} = 6\frac{5}{9}$

$6\frac{5}{9} - \frac{1}{3} = 6\frac{5}{9} - \frac{3}{9}$

$= \mathbf{6\frac{2}{9}}$

Exercise 4

1.



7 units = 56 children

1 unit = 56 ÷ 7

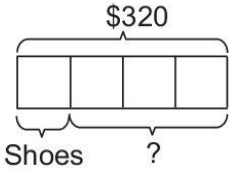
= 8 children

3 units = 3 × 8

= 24 children

There are **24** boys.

2.



4 units = $320
1 unit = $320 ÷ 4
= $80
3 units = 3 × $80
= $240

He had **$240** left.

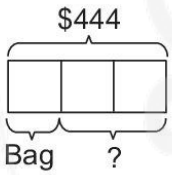
3. 90 – 72 = 18

$\frac{18}{90} = \frac{9}{45}$

$= \frac{1}{5}$

$\frac{1}{5}$ of the balloons were sold today.

4.

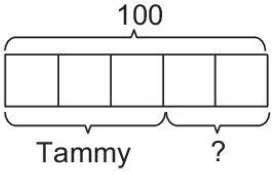


3 units = $444
1 unit = $444 ÷ 3
= $148
2 units = 2 × $148
= $296

$296 – $28 = $268

He had **$268** left.

5.

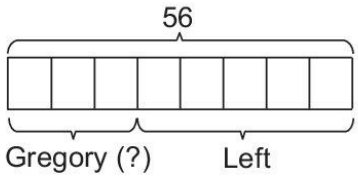


5 units = 100 muffins
1 unit = 100 ÷ 5
= 20 muffins
2 units = 2 × 20
= 40 muffins

40 – 15 = 25

She had **25** muffins left.

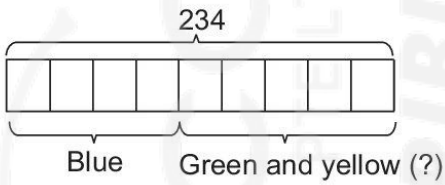
6.



8 units = 56 seashells
1 unit = 56 ÷ 8
= 7 seashells
3 units = 3 × 7
= 21 seashells

He gave away **21** seashells.

7.

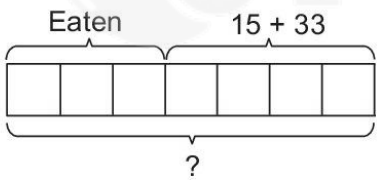


9 units = 234 marbles
1 unit = 234 ÷ 9
= 26 marbles
5 units = 5 × 26
= 130 marbles

130 – 80 = 50

He has **50** yellow marbles.

8.



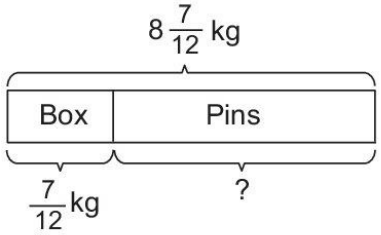
15 + 33 = 48
4 units = 48 doughnuts
1 unit = 48 ÷ 4
= 12 doughnuts
7 units = 7 × 12
= 84 doughnuts

She made **84** doughnuts.

Achieve

Exercise 1

1.



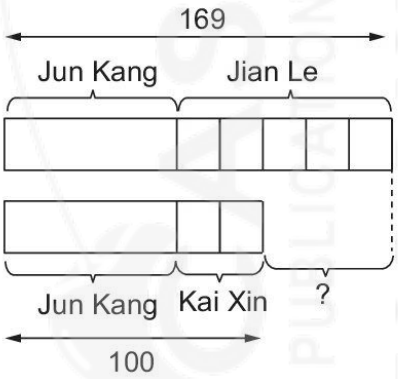
$8\frac{7}{12}$ kg $- \frac{7}{12}$ kg $= 8$ kg

8 kg $\div 2 = 4$ kg

4 kg $+ \frac{7}{12}$ kg $= 4\frac{7}{12}$ kg

The total mass of the metal pins and the iron box when it is half-filled with metal pins is $\mathbf{4\frac{7}{12}}$ **kg**.

2.



3 units = 169 – 100
= 69 marbles
1 unit = 69 ÷ 3
= 23 marbles
2 units = 2 × 23
= 46 marbles

100 – 46 = 54

Jun Kang has **54** marbles.

3. $6 - \frac{5}{12} = 5\frac{12}{12} - \frac{5}{12}$

$= 5\frac{7}{12}$ *l*

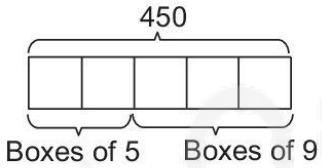
$5\frac{7}{12} + \frac{11}{12} = 5\frac{18}{12}$

$= 6\frac{6}{12}$

$= 6\frac{1}{2}$ *l*

She had $\mathbf{6\frac{1}{2}}$ ***l*** of apple juice after that.

4.



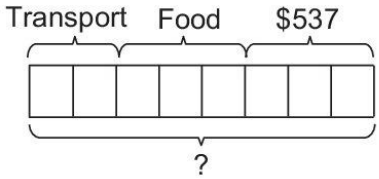
5 units = 450 cookies
1 unit = 450 ÷ 5
= 90 cookies
2 units = 2 × 90
= 180 cookies
3 units = 3 × 90
= 270 cookies

180 ÷ 5 = 36 (Boxes of 5)
270 ÷ 9 = 30 (Boxes of 9)

36 + 30 = 66

He packed **66** boxes in all.

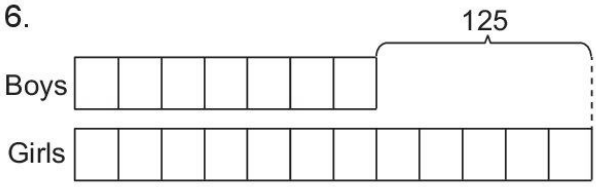
5. $\frac{1}{4} = \frac{2}{8}$



3 units = $537
1 unit = $537 ÷ 3
= $179
8 units = 8 × $179
= $1432

He had **$1432** at first.

6.

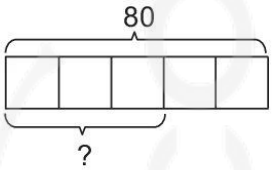


5 units = 125 children
1 unit = 125 ÷ 5
= 25 children
7 units = 7 × 25
= 175 children

175 – 75 = 100

100 boys remained at the childcare centre.

7.

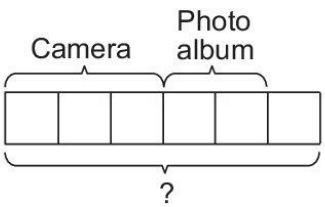


5 units = 80 paper fans
1 unit = 80 ÷ 5
= 16 paper fans
3 units = 3 × 16
= 48 paper fans

48 × $4 = $192

He received **$192** from the sale of the paper fans.

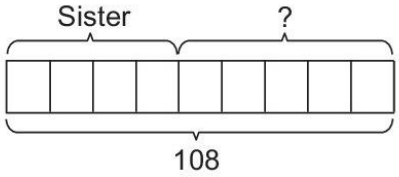
8. $\frac{1}{2} = \frac{3}{6}$, $\frac{1}{3} = \frac{2}{6}$



5 units = $360
1 unit = $360 ÷ 5
= $72
6 units = 6 × $72
= $432

She had **$432** at first.

9. 3 × 36 = 108
She bought 108 sweets.

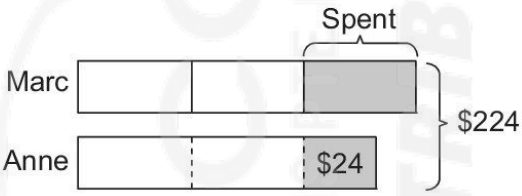


9 units = 108 sweets
1 unit = 108 ÷ 9
= 12 sweets
5 units = 5 × 12
= 60 sweets

60 – 15 = 45

She gave **45** sweets to her brother.

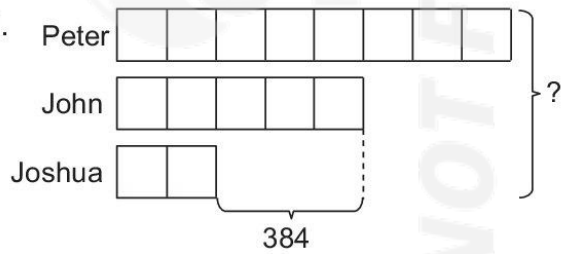
10.



5 units = $224 – $24
= $200
1 unit = $200 ÷ 5
= $40
3 units = 3 × $40
= $120

Marc had **$120** at first.

11.

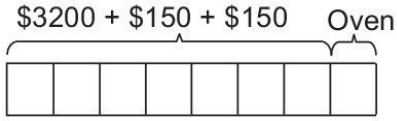


3 units = 384 game cards
1 unit = 384 ÷ 3
= 128 game cards
15 units = 15 × 128
= 1920 game cards

They have **1920** game cards altogether.

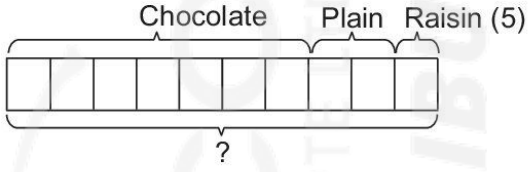
Challenge

Exercise 1

1. 

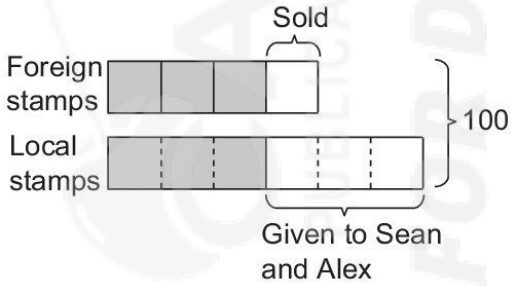
7 units = $3200 + $150 + $150
= $3500
1 unit = $3500 ÷ 7
= $500
8 units = 8 × $5000
= $4000

Norhayati had **$4000** at first.

2. 

1 unit = 5 muffins
10 units = 10 × 5
= 50 muffins

She baked **50** muffins altogether.

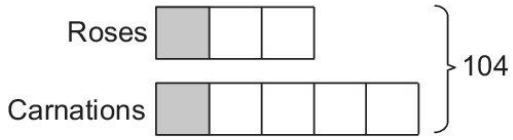
3. 

(a) 10 units = 100 stamps
1 unit = 100 ÷ 10
= 10 stamps
6 units = 6 × 10
= 60 stamps

Kumar had **60** stamps left.

(b) 3 units = 3 × 10
= 30 stamps
30 ÷ 2 = 15

Alex received **15** local stamps from Kumar.

4. 

8 units = 104 flowers
1 unit = 104 ÷ 8
= 13 flowers

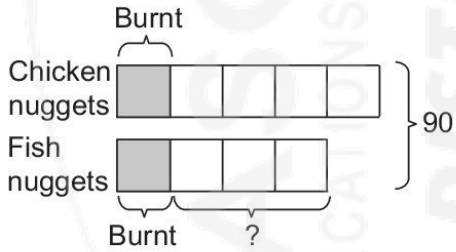
3 units = 3 × 13
= 39 flowers (Roses)

5 units = 5 × 13
= 65 flowers (Carnations)

39 – 28 = 11 (Roses left)
65 – 50 = 15 (Carnations left)

15 – 11 = 4

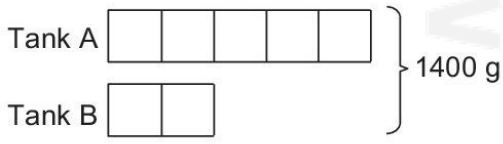
He had **4** more carnations than roses left.

5. 

9 units = 90 nuggets
1 unit = 90 ÷ 9
= 10 nuggets
3 units = 3 × 10
= 30 nuggets

30 fish nuggets were well cooked.

6. Mass:



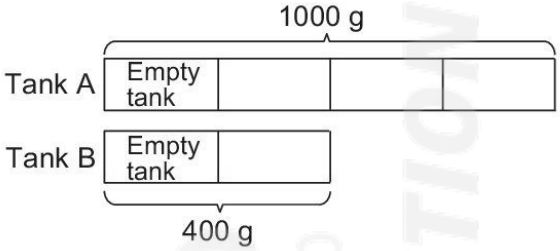
7 units = 1400 g
1 unit = 1400 g ÷ 7
= 200 g

2 units = 2 × 200 g
= 400 g

The mass of Tank B is 400 g.

5 units = 5 × 200 g
= 1000 g

The mass of Tank A is 1000 g.

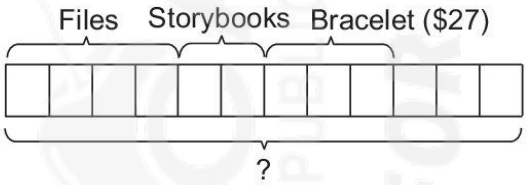


2 units = 1000 g – 400 g
= 600 g
1 unit = 600 g ÷ 2
= 300 g

400 g – 300 g = 100 g

The mass of the empty tank is **100 g**.

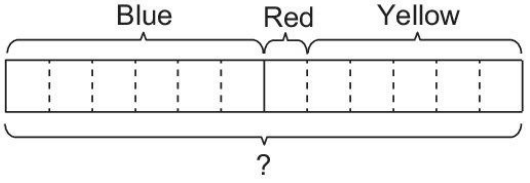
7. $\frac{1}{3} = \frac{4}{12}$, $\frac{1}{6} = \frac{2}{12}$



3 units = $27
1 unit = $27 ÷ 3
= $9
12 units = 12 × $9
= $108

She brought **$108** along for shopping.

8.

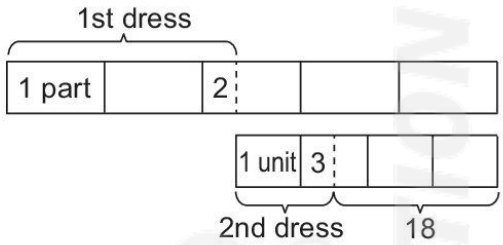


6 units – 1 unit = 5 units

5 units = 15 guppies
1 unit = 15 ÷ 5
= 3 guppies
12 units = 12 × 3
= 36 guppies

Darren bought **36** guppies altogether.

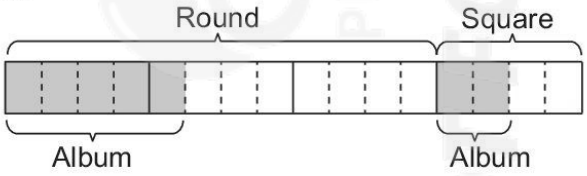
9.



3 units = 18 + 3
= 21 beads
1 unit = 21 ÷ 3
= 7 beads
4 units = 4 × 7
= 28 beads
3 parts = 28 + 2
= 30 beads
1 part = 30 ÷ 3
= 10 beads
5 parts = 5 × 10
= 50 beads

Jin Yi bought **50** beads at first.

10.



16 units – 5 units – 2 units = 9 units

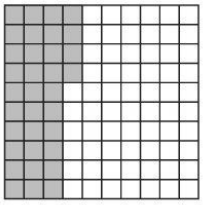
9 units = 27 stickers
1 unit = 27 ÷ 9
= 3 stickers
16 units = 16 × 3
= 48 stickers

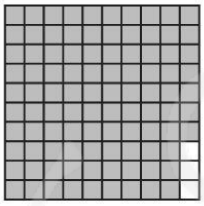
Sean had **48** stickers at first.

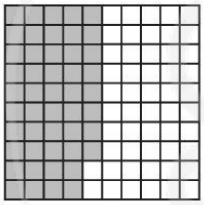
Unit 7 Decimals (1)

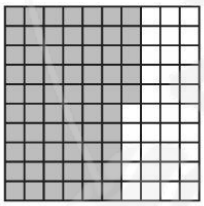
Drills

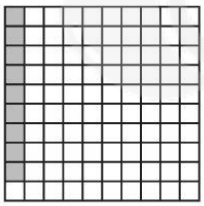
Exercise 1

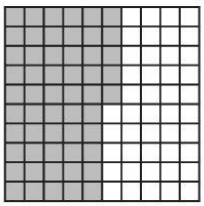
1. 

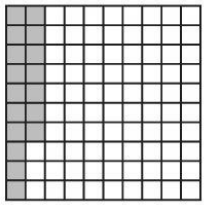
2. 

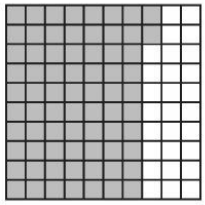
3. 

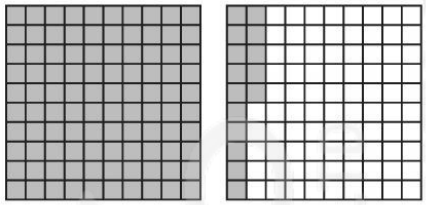
4. 

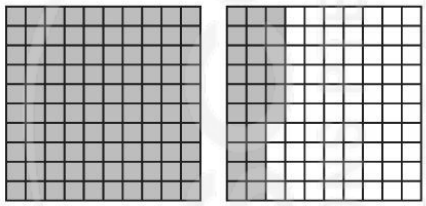
5. 

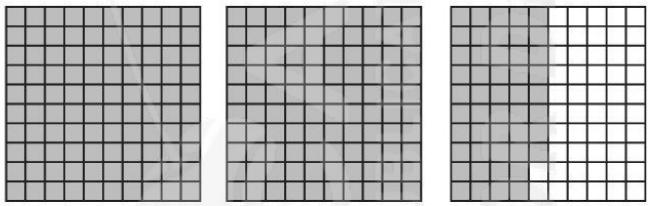
6. 

7. 

8. 

9. 

10. 

11. 

Exercise 2

1. $0.8 = \frac{8}{10} = \mathbf{\frac{4}{5}}$

2. $0.45 = \frac{45}{100} = \mathbf{\frac{9}{20}}$

3. $0.23 = \mathbf{\frac{23}{100}}$

4. $1.53 = \mathbf{1\frac{53}{100}}$

5. $1.07 = \mathbf{1\frac{7}{100}}$

6. $2.5 = 2\frac{5}{10} = \mathbf{2\frac{1}{2}}$

7. $2.86 = 2\frac{86}{100} = \mathbf{2\frac{43}{50}}$

8. $3.81 = \mathbf{3\frac{81}{100}}$

9. $4.26 = 4\frac{26}{100} = \mathbf{4\frac{13}{50}}$

10. $9.64 = 9\frac{64}{100} = 9\frac{32}{50} = \mathbf{9\frac{16}{25}}$

Exercise 3

1. $\frac{17}{25} = \frac{68}{100} = \mathbf{0.68}$

2. $\frac{1}{4} = \frac{25}{100} = \mathbf{0.25}$

3. $\frac{7}{20} = \frac{35}{100} = \mathbf{0.35}$

4. $2\frac{4}{5} = 2\frac{8}{10} = \mathbf{2.8}$

5. $4\frac{7}{10} = \mathbf{4.7}$

6. $6\frac{9}{25} = 6\frac{36}{100} = \mathbf{6.36}$

7. $9\frac{31}{50} = 9\frac{62}{100} = \mathbf{9.62}$

8. $3\frac{59}{500} = 3\frac{118}{1000} = \mathbf{3.118}$

9. $7\frac{2}{125} = 7\frac{16}{1000} = \mathbf{7.016}$

10. $5\frac{852}{1000} = \mathbf{5.852}$

Exercise 4

1.	43.5	2.	65.63
3.	20.59	4.	37.14
5.	24.13	6.	150.27
7.	54.64	8.	64.3
9.	81.92	10.	43.806

Exercise 5

1.	hundredths	2.	tenths
3.	ones	4.	ones
5.	hundredths	6.	ones
7.	tens	8.	hundreds
9.	tenths	10.	hundredths

Exercise 6

1.	4.6	2.	103.6
3.	25.9	4.	49.0
5.	42.9	6.	258.6
7.	87.9	8.	10.0
9.	412.4	10.	820.1
11.	8.7	12.	3.3
13.	2.6	14.	70.0
15.	400.0	16.	41.0

Exercise 7

1.	22.59	2.	9.07
3.	5.39	4.	10.59
5.	9.01	6.	85.56
7.	14.09	8.	7.00
9.	33.61	10.	4.29
11.	96.60	12.	113.50
13.	39.71	14.	7.10
15.	27.35	16.	199.90

Exercise 8

1. $9.6 + 2.7 \approx 10 + 3$
   $= \mathbf{13}$

2. $6.12 + 3.99 \approx 6 + 4$
   $= \mathbf{10}$

3. $12.8 + 6.32 \approx 13 + 6$
   $= \mathbf{19}$

4. $20.8 + 9.25 \approx 21 + 9$
$= \mathbf{30}$

5. $9.4 - 3.9 \approx 9 - 4$
$= \mathbf{5}$

6. $11.5 - 5.6 \approx 12 - 6$
$= \mathbf{6}$

7. $17.12 - 3.41 \approx 17 - 3$
$= \mathbf{14}$

8. $2.6 \times 4 \approx 3 \times 4$
$= \mathbf{12}$

9. $6.04 \times 2 \approx 6 \times 2$
$= \mathbf{12}$

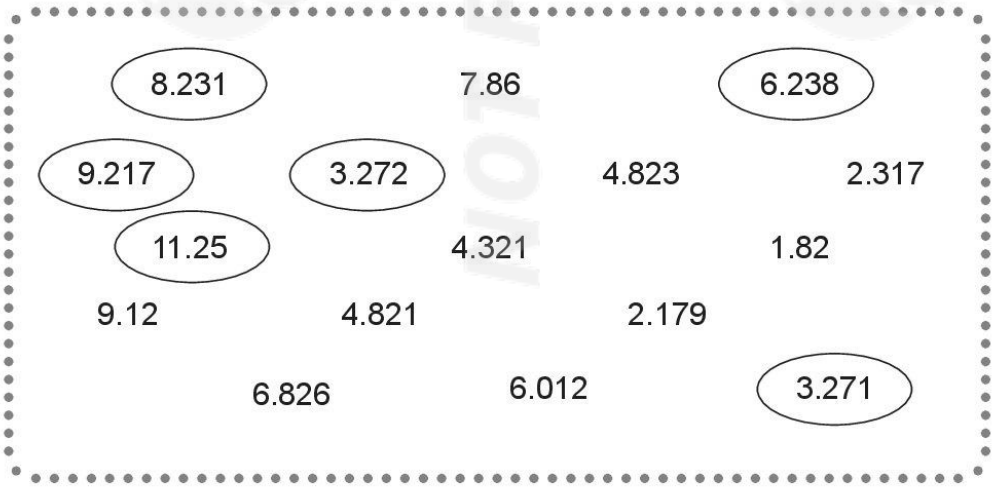
10. $7.15 \times 3 \approx 7 \times 3$
$= \mathbf{21}$

Perform

Exercise 1

No.	Value	Hundreds	Tens	Ones	Tenths	Hundredths
Example	**3.5**			**3**	**5**	
1.	6.48			**6**	**4**	**8**
2.	42.53		**4**	**2**	**5**	**3**
3.	104.63	**1**	**0**	**4**	**6**	**3**
4.	4.09			**4**	**0**	**9**
5.	30.89		**3**	**0**	**8**	**9**

Exercise 2



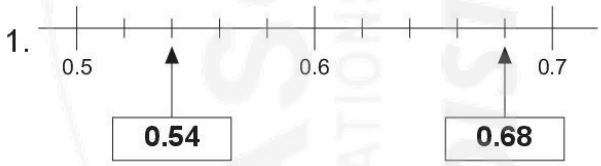
Exercise 3

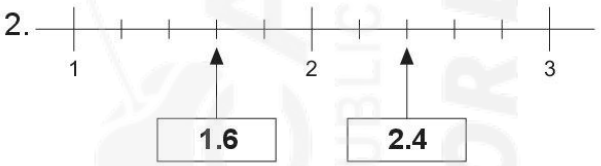
1. is smaller than
2. is smaller than
3. is smaller than
4. is greater than
5. is smaller than

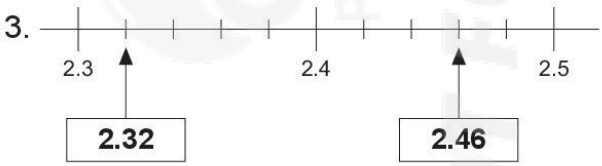
Exercise 4

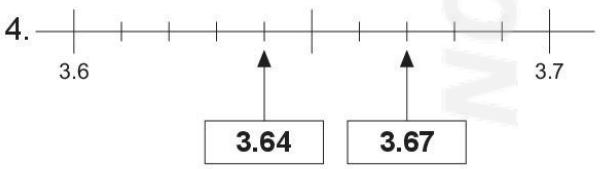
1. 3.264, 3.402, 32.04, 32.44
2. 10.97, 14.35, 21.29, 22.19
3. 125.4, 12.54, 12.45, 1.254
4. 84.23, 43.28, 38.24, 34.82

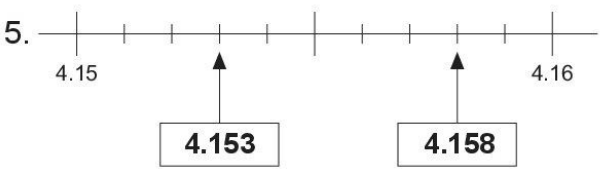
Exercise 5

1. 

2. 

3. 

4. 

5. 

Exercise 6

1. 32.48 + 0.1 = **32.58**
2. 6.83 – 0.01 = **6.82**
3. 43.01 – 43 = **0.01**
4. 38 – 37.99 = **0.01**
5. 16.13 – 16.03 = **0.1**

Exercise 7

1. **(4)**

$$2\frac{3}{4} = 2\frac{75}{100} = 2.75$$

2. **(1)**
0.0435 has the smallest value.

3. **(1)**
32.01 – 32 = 0.01

4. **(1)**
43.2 (9) ← 0.09

5. **(2)**
25 – 0.01 = 24.99

Achieve

Exercise 1

1.

1.25	2.1	0.6
0.156	0.615	0.516
0.04	5.12	2.15

2.

0.19	5.8	0.581
0.021	0.201	0.08
0.6	0.456	1.2

3.

0.63	0.36	1.5
3.6	0.15	0.51
0.89	0.9	0.98

4.

0.7	5.6	0.056
0.074	0.38	0.04
1.5	4.7	0.47

Exercise 2

1.	(0.6)	$\frac{3}{4}$	($\frac{3}{5}$)	0.65
2.	$\frac{3}{4}$	(7.5)	($7\frac{1}{2}$)	0.075
3.	(4.3)	0.43	($4\frac{3}{10}$)	$\frac{43}{1000}$
4.	($2\frac{5}{8}$)	(2.625)	26.25	$26\frac{1}{2}$
5.	(0.125)	($\frac{1}{8}$)	0.8	$\frac{1}{16}$
6.	($\frac{1}{4}$)	(0.25)	$\frac{1}{2}$	0.52
7.	(0.15)	$1\frac{1}{5}$	0.015	($\frac{3}{20}$)
8.	1.4	($\frac{14}{100}$)	$1\frac{4}{100}$	(0.14)
9.	(8.7)	($8\frac{7}{10}$)	0.087	$\frac{87}{100}$
10.	($\frac{13}{200}$)	$6\frac{5}{10}$	(0.065)	0.65

Unit 8 Decimals (2)

Drills

Exercise 1

1. 16.5
2. 40.0
3. 83.4
4. 51.7
5. 10.23
6. 46.78
7. 582.45

Exercise 2

1. 8.8
2. 4.6
3. 4.8
5. 2.68
5. 23.44
6. 8.75
7. 5.07
8. 46.40
9. 23.77

Exercise 3

1. 48.6
2. 5.6
3. 18.15
4. 19.10
5. 21.44
6. 52.50
7. 246.87
8. 74.55
9. 159.84

Exercise 4

1. 0.58
2. 9.7
3. 1.95
4. 5.08
5. 8.12

Exercise 5

No.	First No.	Second No.	Product	Quotient
1.	3.9	3	**11.7**	**1.3**
2.	38.22	7	**267.54**	**5.46**
3.	32.5	5	**162.5**	**6.5**
4.	41.04	9	**369.36**	**4.56**
5.	46.76	7	**327.32**	**6.68**
6.	52.8	3	**158.4**	**17.6**
7.	58.56	6	**351.36**	**9.76**
8.	63.88	4	**255.52**	**15.97**
9.	73.5	5	**367.5**	**14.7**
10.	47.12	8	**376.96**	**5.89**
11.	78.3	2	**156.6**	**39.15**
12.	9.48	6	**56.88**	**1.58**
13.	27.9	3	**83.7**	**9.3**
14.	45.8	2	**91.6**	**22.9**
15.	32.1	5	**160.5**	**6.42**

Perform

Exercise 1

1.

4.3	0.5	**5.2**	10
5.2	**1.3**	**3.5**	10
0.5	**8.2**	1.3	10
10	10	10	

The sum of each row and column is equal to 10.

2.

7.1	4.6	**3.4**	15.1
4.3	**8**	2.8	15.1
3.7	2.5	8.9	15.1
15.1	15.1	15.1	

The sum of each row and column is equal to 15.1.

Exercise 2

1. **(1)**
   128.3 – 64.27
   = 64.03
   ≈ 64.0 (1 d.p)

2. **(4)**
   5.23 + 2.16 + 16.45
   = 23.84

3. **(1)**
   54.6 ÷ 2 = 27.3
   27.3 ÷ 3 = 9.1

4. **(2)**
   53.57 + 19.43 = 73
   73 – 23.18 = 49.82

5. **(1)**
   65.7 ÷ 5 = 13.14
   ≈ 13.1 (1 d.p)

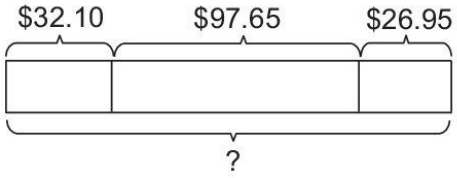
6. **(2)**
   30 – 21.4 = 8.6
   8.6 + 5.46 = 14.06
   ≈ 14 (nearest whole number)

7. **(3)**
   13.42 × 3 = 40.26
   The value of the digit 2 is 0.2.

8. **(4)**
   87 – 32.46 – 10.23 = 44.31

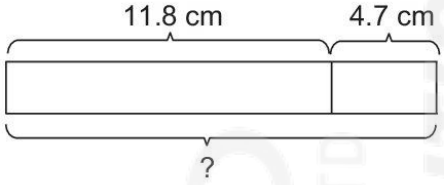
9. **(3)**
   42.28 ÷ 4 = 10.57
   10.57 × 2 = 21.14
   ≈ 21.1 (1 d.p)

Exercise 3

1.


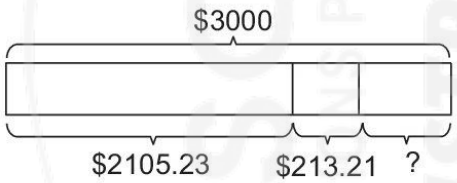
$32.10 + $97.65 + $26.95 = $156.70

She had **$156.70** at first.

2.


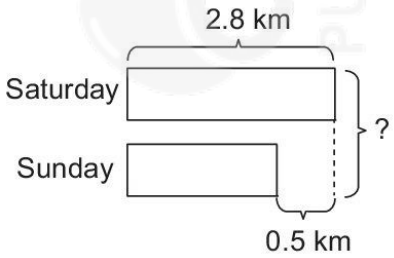
11.8 + 4.7 = 16.5 cm

She bought **16.5 cm** of ribbon.

3.


$2105.23 + $213.21 = $2318.44
$3000 – $2318.44 = $681.56

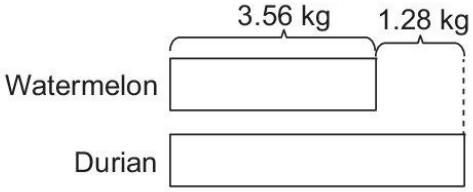
He received **$681.56** in change.

4.


2.8 km – 0.5 km = 2.3 km
2.8 km + 2.3 km = 5.1 km

The total distance he jogged on both days was **5.1 km**.

5.



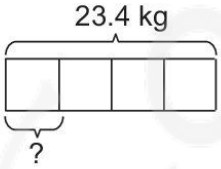
3.56 kg + 1.28 kg = 4.84 kg (Durian)
2 × 3.56 kg = 7.12 kg

7.12 kg + 4.84 kg = 11.96 kg

The total mass of 2 similar watermelons and a durian is **11.96 kg**.

Exercise 4

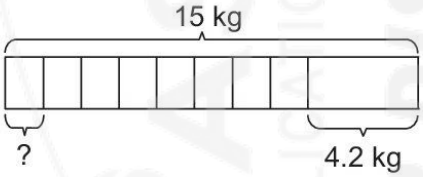
1.



23.4 kg ÷ 4 = 5.85 kg

The mass of each bag of red beans was **5.85 kg**.

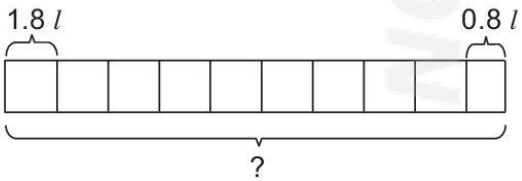
2.



8 units = 15 kg – 4.2 kg
= 10.8 kg
1 unit = 10.8 kg ÷ 8
= 1.35 kg

There was **1.35 kg** of rice in each container.

3.



1 unit = 1.8 *l*
9 units = 9 × 1.8 *l*
= 16.2 *l*
16.2 *l* + 0.8 *l* = 17 *l*

He had **17 *l*** of wine.

4. 5 × $54.60 = $273
$273 ÷ 7 = $39

Each pair of jeans cost **$39**.

5. 3 × 5.56 *l* = 16.68 *l*
16.68 *l* ÷ 4 = 4.17 *l*

There was **4.17 *l*** of juice in each container.

6. 9 × $1.85 = $16.65
$20 – $16.65 = $3.35

She received **$3.35** in change.

7. 100 g ⟶ $2.95
700 g ⟶ 7 × $2.95 = $20.65

She paid **$20.65** in all.

8. 2 × $3.50 = $7
A bookmark cost $7.

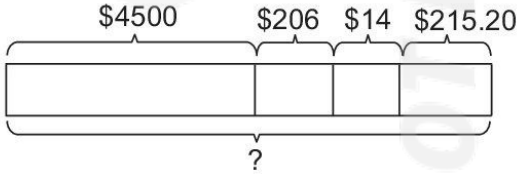
6 × $3.50 = $21
15 × $7 = $105
$105 + $21 = $126

She spent **$126** altogether.

Achieve

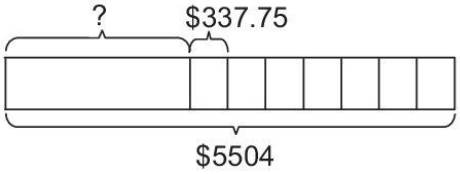
Exercise 1

1.



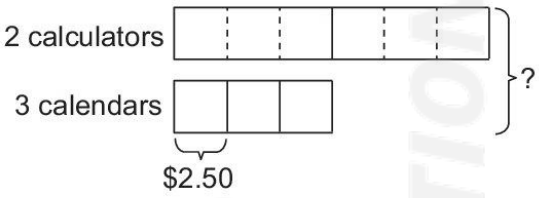
$4500 + $206 + $14 + $215.20
= $4935.20

He had **$4935.20** at first.

2. 

$7 \times \$337.75 = \$2364.25$
$\$5504 - \$2364.25 = \$3139.75$

She had **$3139.75** at first.

3. 

1 unit = $2.50
9 units = $9 \times \$2.50$
= $22.50

$\$50 - \$22.50 = \$27.50$

She received **$27.50** in change.

4. $9 \times 1.85 \text{ m} = 16.65 \text{ m}$
$20.85 \text{ m} - 16.65 \text{ m} = 4.2 \text{ m}$
$4.2 \text{ m} \div 3 = 1.4 \text{ m}$

She used **1.4 m** to make each dress.

5.
2 bowls + 3 plates ⟶ $37.55
× 2 ↓
4 bowls + 6 plates ⟶ $2 \times \$37.55$
= $75.10
4 bowls + 5 plates ⟶ $66.45

1 plate ⟶ $\$75.10 - \$66.45$
= $8.65

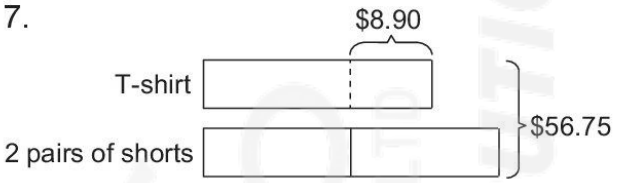
1 plate cost **$8.65**.

6. Cost of 6 doughnuts
$= 6 \times \$1.90$
= $11.40

Cost of 9 fruit tarts
$= \$37.05 - \$11.40$
= $25.65

Cost of 1 fruit tart
$= \$25.65 \div 9$
= $2.85

Each fruit tart cost **$2.85**.

7. 

3 units = $\$56.75 - \$8.90$
= $47.85
1 unit = $\$47.85 \div 3$
= $15.95

$\$15.95 + \$8.90 = \$24.85$

The T-shirt costs **$24.85**.

8. $12 \div 3 = 4$
$4 \times \$1.85 = \$7.40$

$15 \div 5 = 3$
$3 \times \$3.60 = \$10.80$

$\$7.40 + \$10.80 = \$18.20$

He spent **$18.20** in all.

9. $72.60 – $10.30 = $62.30

× 2 (4 pens + 7 files ⟶ $62.30
8 pens + 14 files ⟶ 2 × $62.30
= $124.60
8 pens + 6 files ⟶ $72.60

8 files ⟶ $124.60 – $72.60
= $52
1 file ⟶ $52 ÷ 8 = $6.50

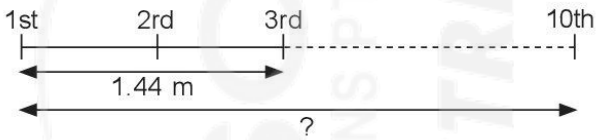
He paid **$6.50** for each file.

10. 4 × $5 = $20

$105.60 + $125.40 + $20 = $251
$251 ÷ 4 = $62.75

Each of them paid **$62.75**.

11.

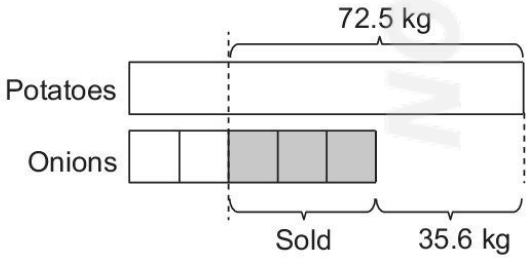


Distance between 2 consecutive cones
= 1.44 m ÷ 2
= 0.72 m

Distance between the 1st and 10th cone
= 9 × 0.72 m
= 6.48 m

The distance between the first cone and the last cone is **6.48 m**.

12.



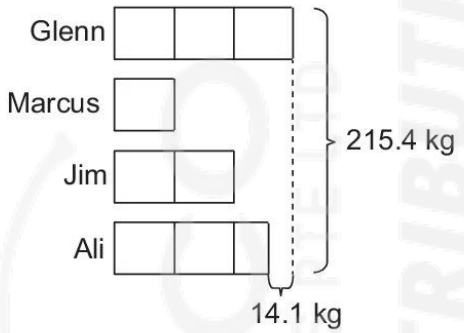
3 units = 72.5 kg – 35.6 kg
= 36.9 kg
1 unit = 36.9 kg ÷ 3
= 12.3 kg
5 units = 5 × 12.3 kg
= 61.5 kg

The shopkeeper had **61.5 kg** of onions at first.

Challenge

Exercise 1

1.



(a) 9 units = 215.4 kg + 14.1 kg
= 229.5 kg
1 unit = 229.5 kg ÷ 9
= 25.5 kg

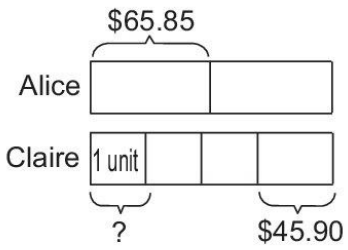
Jim is **25.5 kg** heavier than Marcus.

(b) 6 units = 6 × 25.5 kg
= 153 kg

153 kg – 14.1 kg = 138.9 kg

The total mass of Glenn and Ali is **138.9 kg**.

2.



$2 \times \$65.85 = \$131.70$

Each of them brought $131.70 out for shopping.

3 units = $131.70 – $45.90
= $85.80
1 unit = $85.80 ÷ 3
= $28.60

Claire spent **$28.60** on each lipstick.

3. 7 days ⟶ 28 m – 8.4 m = 19.6 m
1 day ⟶ 19.6 m ÷ 7 = 2.8 m

8.4 m = 2.8 m + 2.8 m + 2.8 m

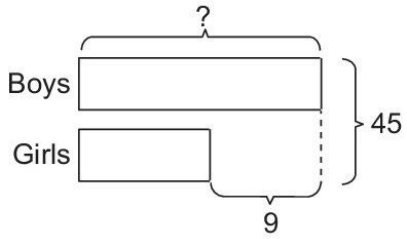
She needs **3** more days to complete knitting the scarf.

4. $3.00 + $3.30 = $6.30
Each adult paid $6.30.

Cost of adult tickets
= 3 × $6.30
= $18.90

Cost of child tickets
= $153.90 – $18.90
= $135

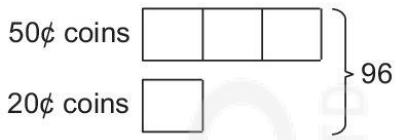
Number of children
= $135 ÷ $3
= 45



2 units = 45 + 9
= 54 children
1 unit = 54 ÷ 2
= 27 children

27 boys went to the goat farm.

5.



4 units = 96 coins
1 unit = 96 ÷ 4
= 24 coins
3 units = 3 × 24
= 72 coins

Wilson had 72 fifty-cent coins and 24 twenty-cent coins.

Value of 50¢ coins
= 72 × 50¢
= $36

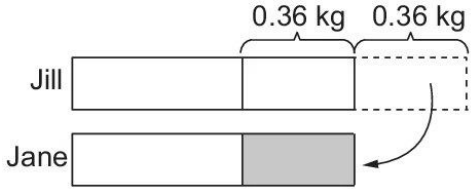
Value of 20-¢ coins
= 24 × 20¢
= $4.80

Total amount = $36 + $4.80
= $40.80

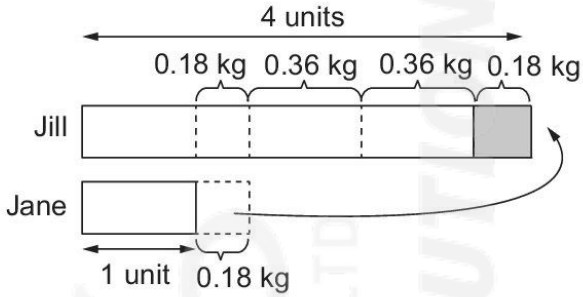
$40.80 – (3 × 10¢)
= $40.80 – 30¢
= $40.50

The skate scooter cost him **$40.50**.

6. 1st situation:



2nd situation:

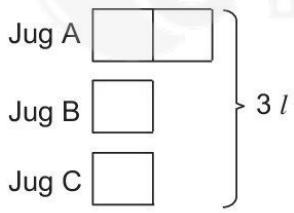


3 units = 0.18 kg + 0.36 kg + 0.36 kg + 0.18 kg
= 1.08 kg
1 unit = 1.08 kg ÷ 3
= 0.36 kg
4 units = 4 × 0.36 kg
= 1.44 kg

1.44 kg – 0.18 kg = 1.26 kg

Jill had **1.26 kg** of beads.

7. In the end:



4 units = 3 *l*
1 unit = 3 *l* ÷ 4
= 0.75 *l*
2 units = 2 × 0.75 *l*
= 1.5 *l*

Work backwards.

	Jug A	Jug B	Jug C
In the end:	1.5 *l*	0.75 *l*	0.75 *l*
	+ 0.45 *l* ↓	+ 1.25 *l* ↓	– 0.45 *l* ↓
	1.95 *l*		
	– 1.25 *l* ↓		
At first:	0.7 *l*	2 *l*	0.3 *l*

There was **0.7 *l*** of lemon juice in Jug A at first.

8.
4 rulers + 3 pens → \$20.30
× 3
12 rulers + 9 pens → 3 × \$20.30
= \$60.90
3 rulers + 4 pens → \$20.30 – \$0.70
= \$19.60
× 4
12 rulers + 16 pens → 4 × \$19.60
= \$78.40

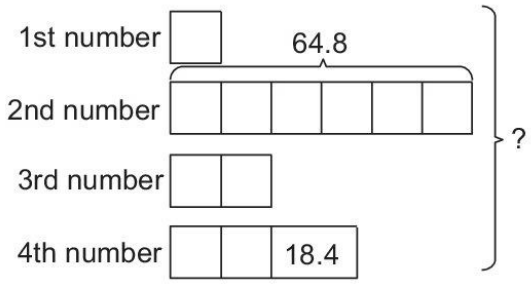
16 pens – 9 pens → \$78.40 – \$60.90
= \$17.50

7 pens → \$17.50

1 pen → \$17.50 ÷ 7
= \$2.50

Each pen cost **\$2.50**.

9.



6 units = 64.8
1 unit = 64.8 ÷ 6
= 10.8
11 units = 11 × 10.8
= 118.8

118.8 + 18.4 = 137.2

The sum of the 4 numbers is **137.2**.

Unit 9 Area and Perimeter

Drills

Exercise 1

1. Perimeter = **30 cm**
Area = **14 cm²**

2. Perimeter = **28 cm**
Area = **14 cm²**

3. Perimeter = **30 cm**
Area = **16 cm²**

4. Perimeter = **22 cm**
Area = **14 cm²**

Exercise 2

1. Length = 36 cm ÷ 4
= **9 cm**
Area = 9 × 9
= **81 cm²**

2. Length = 28 cm ÷ 4
= **7 cm**
Area = 7 × 7
= **49 cm²**

3. Area = 25 cm²
5 × 5 = 25
Length = **5 cm**

Perimeter = 4 × 5 cm
= **20 cm**

4. Area = 64 cm²
8 × 8 = 64

Length = **8 cm**

Perimeter = 4 × 8 cm
= **32 cm**

Exercise 3

1. Length + Breadth = 24 cm ÷ 2
   7 + Breadth = 12
   Breadth = 12 – 7
   = **5 cm**

   Area = 7 × 5
   = **35 cm²**

2. Length + Breadth = 22 cm ÷ 2
   Length + 2 = 11
   Length = 11 – 2
   = **9 cm**

   Area = 9 × 2
   = **18 cm²**

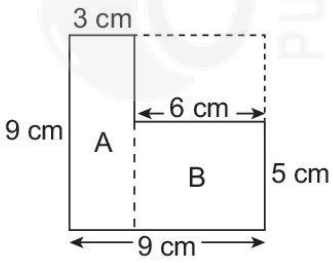
3. Breadth = 96 cm² ÷ 12 cm
   = **8 cm**

   Perimeter = 12 + 8 + 12 + 8
   = **40 cm**

4. Length = 77 cm² ÷ 7 cm
   = **11 cm**

   Perimeter = 11 + 7 + 11 + 7
   = **36 cm**

Exercise 4

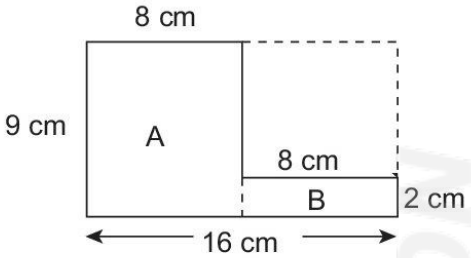
1. 

   Perimeter = 4 × 9
   = **36 cm**

   Area of Rectangle A = 9 × 3
   = 27 cm²

   Area of Rectangle B = 6 × 5
   = 30 cm²

   Area of figure = 27 + 30
   = **57 cm²**

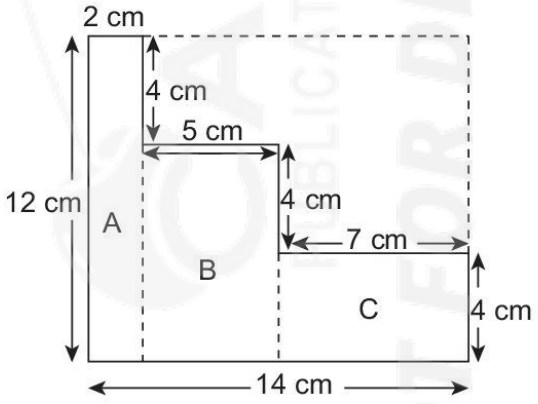
2. 

   Perimeter = 16 + 9 + 16 + 9
   = **50 cm**

   Area of Rectangle A = 9 × 8
   = 72 cm²

   Area of Rectangle B = 8 × 2
   = 16 cm²

   Area of figure = 72 + 16
   = **88 cm²**

3. 

   Perimeter = 14 + 12 + 14 + 12
   = **52 cm**

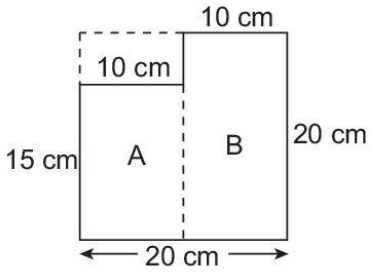
   Area of Rectangle A = 12 × 2
   = 24 cm²

   Area of Rectangle B = 8 × 5
   = 40 cm²

Area of Rectangle C = 7 × 4
= 28 cm²

Area of figure = 24 + 40 + 28
= **92 cm²**

4.



Perimeter = 4 × 20 cm
= **80 cm**

Area of Rectangle A = 15 × 10
= 150 cm²

Area of Rectangle B = 20 × 10
= 200 cm²

Area of figure = 150 + 200
= **350 cm²**

Perform

Exercise 1

1. **(1)**
Length + Breadth = 540 cm ÷ 2
164 + Breadth = 270
Breadth = 270 – 164
= 106 cm

2. **(4)**
Length + Breadth = 96 m ÷ 2
Length + 14 = 48
Length = 48 – 14
= 34 m

Area = 34 × 14
= 476 m²

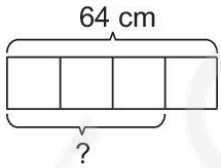
3. **(3)**
Breadth = 76 cm ÷ 2
= 38 cm

Area = 76 × 38
= 2888 cm²

4. **(3)**
Length = 36 m ÷ 4
= 9 m

Area = 9 × 9
= 81 m²

5. **(4)**

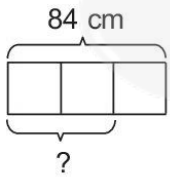


4 units = 64 cm
1 unit = 64 ÷ 4
= 16 cm
3 units = 3 × 16 cm
= 48 cm

Its breadth is 48 cm.

Area = 64 × 48
= 3072 cm²

6. **(2)**



3 units = 84 cm
1 unit = 84 cm ÷ 3
= 28 cm
2 units = 2 × 28 cm
= 56 cm

Its breadth is 56 cm.

Perimeter = 84 + 56 + 84 + 56
= 280 cm

7. **(1)**
Length = 2 × 32 m
= 64 m

Perimeter = 64 + 32 + 64 + 32
= 192 m

Exercise 2

1. Area = 34 × 15
= **510 cm²**

2. Area = 16 × 16
= **256 m²**

3. (a) Perimeter of field
= 92 + 36 + 92 + 36
= **256 m**

(b) Distance Leslie ran
= 5 × 256 m
= **1280 m**

4. (a) Area of carpet
= 10 × 8
= **80 m²**

(b) Perimeter of carpet
= 10 + 8 + 10 + 8
= **36 m**

5. Length = 60 cm² ÷ 5 cm
= 12 cm

Perimeter = 12 + 5 + 12 + 5
= **34 cm**

6. Area of square = 64 cm²
8 × 8 = 64

The length of each side of the square is 8 cm.

Perimeter of square
= 4 × 8 cm
= 32 cm

The length of the wire is **32 cm**.

7. Area of Rectangle A
= 12 × 8
= 96 cm²

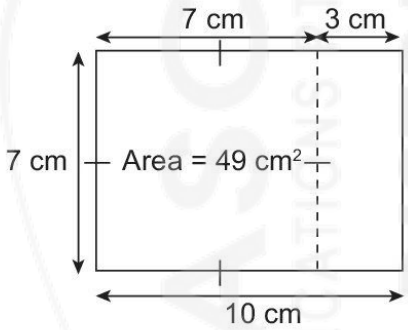
Length of Rectangle B
= 96 cm² ÷ 6
= 16 cm

Perimeter of Rectangle B
= 16 + 6 + 16 + 6
= **44 cm**

8. Perimeter of square = 56 cm

Length of square = 56 cm ÷ 4
= 14 cm

Area of square
= 14 × 14
= **196 cm²**

9. 

Area of square = 49 cm²
7 × 7 = 49

The length of each side of the square is 7 cm.

Length of figure = 7 + 3 = 10 cm

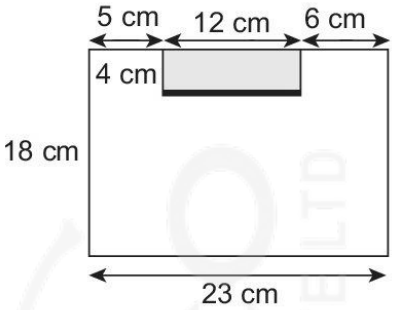
Perimeter of figure
= 10 + 7 + 10 + 7
= **34 cm**

10. Area of bigger rectangle
= 14 × 9
= 126 cm^2

Area of shaded rectangle
= 6 × 3
= 18 cm^2

Area of unshaded part
= 126 cm^2 – 18 cm^2
= **108 cm^2**

11.



Perimeter of unshaded part
= 23 + 18 + 23 + 18 + 4 + 4
= **90 cm**

12. Length
= 91 cm^2 ÷ 7 cm
= 13 cm

Perimeter
= 13 + 7 + 13 + 7
= **40 cm**

13. Length = 3 × 23 m
= 69 m

Area of room
= 69 × 23
= **1587 m^2**

14. Area of floor
= 22 × 18
= 396 m^2

Area of carpet
= 9 × 6
= 54 m^2

Area of floor not covered by carpet
= 396 – 54
= **342 m^2**

Achieve

Exercise 1

1. Area of floor
= 28 × 25
= 700 m^2

Area of floor covered by wardrobe
= 18 × 9
= 162 m^2

Area of carpet
= 5 × 5
= 25 m^2

Area of floor not covered by wardrobe and carpet
= 700 – 162 – 25
= 513 m^2

The area of the floor not covered by wardrobe and carpet is **513 m^2**.

2. (a) Perimeter of field
= 20 + 12 + 20 + 12
= 64 m

Length of square plot of land
= 64 m ÷ 4
= 16 m

The length of the square plot of land is **16 m**.

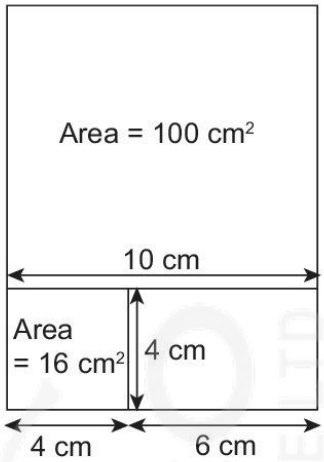
(b) Area of field
= 20 × 12
= 240 m^2

Area of square plot of land
= 16 × 16
= 256 m^2

Total area
= 240 + 256
= 496 m^2

The total area of the rectangular field and the square plot land is **496 m^2**.

3.



Area of bigger square = 100 cm^2
$10 \times 10 = 100$

Length of bigger square = 10 cm

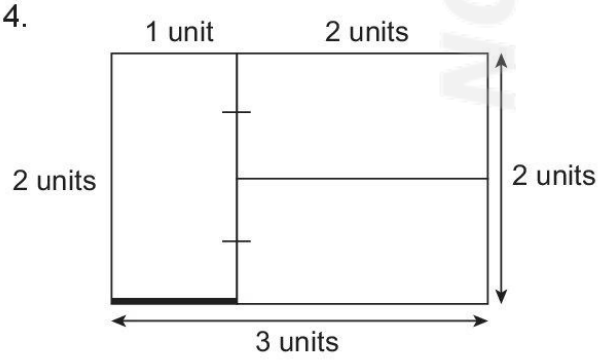
Area of smaller square = 16 cm^2
$4 \times 4 = 16$
Length of smaller square = 4 cm

Breadth of rectangle = 4 cm
Length of rectangle = 10 – 4 = 6 cm

Area of rectangle
= 6 × 4
= 24 cm^2

The area of the rectangle is **24 cm^2**.

4.



10 units = 120 cm
1 unit = 120 cm ÷ 10
= 12 cm
2 units = 2 × 12 cm
= 24 cm
3 units = 3 × 12 cm
= 36 cm

Area of figure
= 36 × 24
= 864 cm^2

The area of the figure is **864 cm^2**.

5. Area of floor
= 21 × 15
= 315 m^2

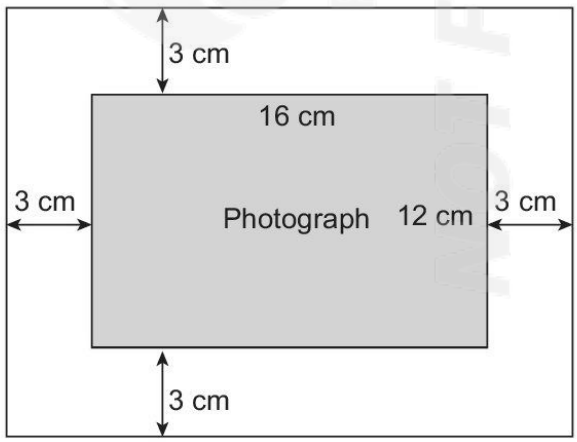
Length of square mat
= 32 m ÷ 4
= 8 m

Area of square mat
= 8 × 8
= 64 m^2

Area of room not covered by mat
= 315 – 64
= 251 m^2

The area of the floor that is not covered by the mat is **251 m^2**.

6.



Length of bigger rectangle
= 16 + 3 + 3
= 22 cm

Breadth of bigger rectangle
= 12 + 3 + 3
= 18 cm

Area of bigger rectangle
= 22 × 18
= 396 cm^2

Area of smaller rectangle
= 16 × 12
= 192 cm^2

Area of border
= 396 – 192
= 204 cm^2

The area of the border is **204 cm^2**.

7. Length of carpet
= 24 – 3 – 3
= 18 m

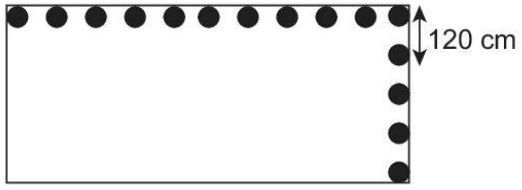
Breadth of carpet
= 15 – 2 – 2
= 11 m

Area of carpet
= 18 × 11
= 198 m^2

The area of the carpet is **198 m^2**.

Challenge

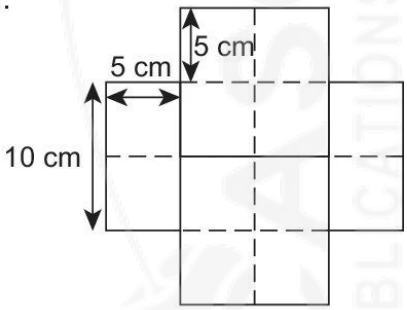
Exercise 1

1. 

Breadth = 4 × 120 cm
= 480 cm
Length = 10 × 120 cm
= 1200 cm

Perimeter of plot of land
= 1200 + 480 + 1200 + 480
= 3360 cm
= 33 m 60 cm

The perimeter of the plot of land is **33 m 60 cm**.

2. 

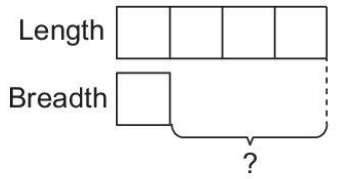
1 square = 4 smaller squares
1 smaller square = 5 cm by 5 cm

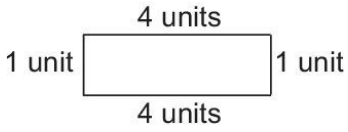
Area of 1 smaller square
= 5 × 5
= 25 cm^2

Total area of 12 smaller squares
= 12 × 25 cm^2
= 300 cm^2

The area of the figure is **300 cm^2**.

3.





Perimeter of cardboard
= 4 + 1 + 4 + 1
= 10 units

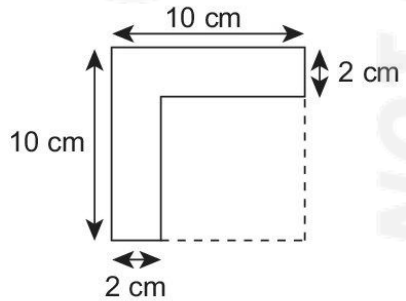
10 units = 80 cm
1 unit = 80 cm ÷ 10
= 8 cm

Difference = 4 units – 1 unit
= 3 units
3 units = 3 × 8
= 24 cm

The difference between the length and the breadth of the cardboard is **24 cm**.

4. Use guess and check.

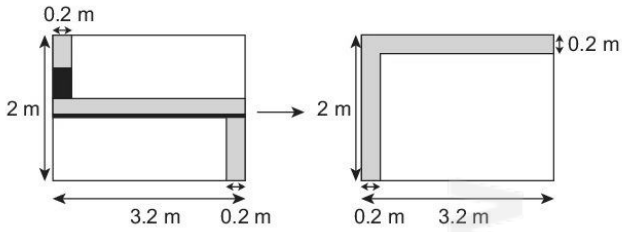
Length of bigger square	Area of bigger square	Length of smaller square	Area of smaller square	Difference	Check
9 cm	9 × 9 = 81 cm²	7 cm	7 × 7 = 49 cm²	81 – 49 = 32 cm²	✗
10 cm	10 × 10 = 100 cm	8 cm	8 × 8 = 64 cm²	100 – 64 = 36 cm²	✓



Perimeter of cardboard not covered by coloured paper
= 4 × 10 cm
= 40 cm

The perimeter of the cardboard that is not covered by the coloured paper is **40 cm**.

5.



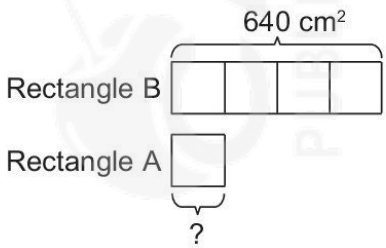
Length of wall covered with white tiles:
3.2 m – 0.2 m = 3 m

Breadth of wall covered with white tiles:
2 m – 0.2 m = 1.8 m

Area of wall covered with white tiles
= 3 × 1.8
= 5.4 m²

The area of the wall covered with white tiles is **5.4 m²**.

6. Area of Rectangle B
= 40 × 16
= 640 cm²



4 units = 640 cm²
1 unit = 640 cm² ÷ 4
= 160 cm²

The area of Rectangle A is 160 cm².

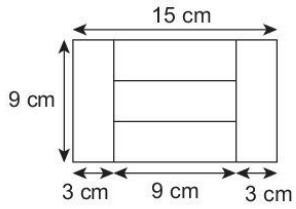
160 cm² ÷ 2 = 80 cm²

80 cm² of Rectangle A overlapped Rectangle B.

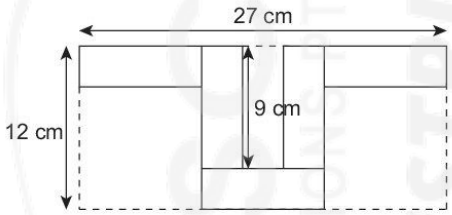
640 cm^2 – 80 cm^2 = 560 cm^2

The area of Rectangle B that is not overlapped by Rectangle A is **560 cm^2**.

7. Length of original cardboard
= 135 cm^2 ÷ 9 cm
= 15 cm



Breadth of each rectangle
= (15 – 9) ÷ 2
= 6 ÷ 2
= 3 cm



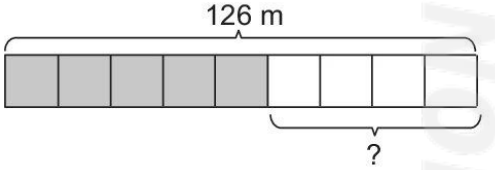
Perimeter of new figure
= 27 + 12 + 27 + 12 + 9 + 9
= 96 cm

The perimeter of the new figure is **96 cm**.

8. Use guess and check.

Length	Breadth	Area	Check
40 m	20 m	40 × 20 = 800 m^2	✗
42 m	21 m	42 × 21 = 882 m^2	✓

Perimeter of field
= 42 + 21 + 42 + 21
= 126 m



9 units = 126 m
1 unit = 126 m ÷ 9
= 14 m
4 units = 4 × 14 m
= 56 m

He must run **56 m** more to go around the field once.

Unit 10 Tables and Line Graphs

Drills

Exercise 1

1.

Day	Mon	Tue	Wed	Thur	Fri
Number of balloons sold	10	8	12	20	18

2.

Course	Computer	Ballet	Drama	Phonics
Number of children	14	8	10	12

3.

Children	Tony	Jimmy	Chris	Dennis
Amount of savings ($)	25	45	30	60

Perform

Exercise 1

1. (a) 450 – 275 = 175
175 adults visited the zoo that day.

(b) 750 – 550 = 200
200 more than people visited the zoo on Saturday than on Thursday.

(c) The zoo had the most number of visitors on **Saturday**.

(d) 450 + 550 + 700 + 750 + 650 = 3100

3100 people visited the zoo over the five days altogether.

(e) 3100 × $8 = $24 800

$24 800 was collected from the sale of entrance tickets for the five days altogether.

2. (a) Raymond sold **28** cars in January.

(b) 36 – 16 = 20

Raymond sold **20** fewer cars in April than in February.

(c) Raymond sold the most number of cars in **February**.

(d) 28 + 36 + 24 + 16 = 104

Raymond sold **104** cars altogether over the 4 months.

3. (a) 140 – 60 = 80
Class 4B collected **80 more** empty bottles than Class 4E.

4B 4D

(b) 140 + 110 = 250
Class **4B** and Class **4D** collected a total of 250 empty bottles.

(c) 90 + 140 + 80 + 110 + 60 = 480

Required fraction

$= \frac{80}{480}$

$= \frac{\mathbf{1}}{\mathbf{6}}$

4. (a) There were **36** visitors at 11 a.m.

(b) The greatest increase in the number of visitors was between **1 p.m. and 2 p.m.**

(c) 36 + 30 + 26 + 42 + 50 = 184
The total number of visitors to the art gallery between 11 a.m. and 3 p.m. was **184**.

5. (a) Megan made **31** necklaces.

(b) 36 – 29 = 7

Sandra made **7** more bracelets than necklaces.

(c) 33 – 27 = 6

Alicia made **6** fewer necklaces than bracelets.

(d) 29 + 36 = 65
27 + 33 = 60
65 – 60 = 5

Sandra made **5** more bracelets and necklaces than Alicia.

6. (a) 36 – 25 = 11

11 more pupils from Class 4B attended the workshop than Class 4C.

(b) 30 – 18 = 12

12 boys from Class 4A attended the workshop.

(c) 30 + 36 + 25 + 29 = 120

Required fraction

$= \frac{36}{120}$

$= \mathbf{\frac{3}{10}}$

(d) 39 – 30 = 9 (4A)
41 – 36 = 5 (4B)
40 – 25 = 15 (4C)
38 – 29 = 9 (4D)

9 + 5 + 15 + 9 = 38

38 pupils from all the four classes did not attend the workshop.

7. (a) **29** pupils have 3 siblings.

(b) 23 + 56 = 79

79 pupils have less than 2 siblings.

(c) 29 + 11 + 8 = 48

48 pupils have at least 3 siblings.

(d) 23 + 56 + 48 + 29 + 11 + 8 = 175

There are **175** pupils in the group altogether.

8. (a) 49 – 38 = 11

11 fewer muffins than cupcakes were sold on Monday.

(b) 38 + 50 + 48 = 136
192 – 136 = 56

It sold **56** muffins on Wednesday.

(c) 49 + 52 + 64 + 48 = 213

213 cupcakes were sold over the four days.

213 – 192 = 21

21 more cupcakes than muffins were sold over the four days.

9. (a) 13 + 11 = 24

24 pupils borrowed more than 2 books.

(b) 3 + 5 + 7 = 15

15 pupils borrowed less than 3 books.

(c) 3 + 5 + 7 + 13 + 11 = 39

There are **39** pupils in Class 4A.

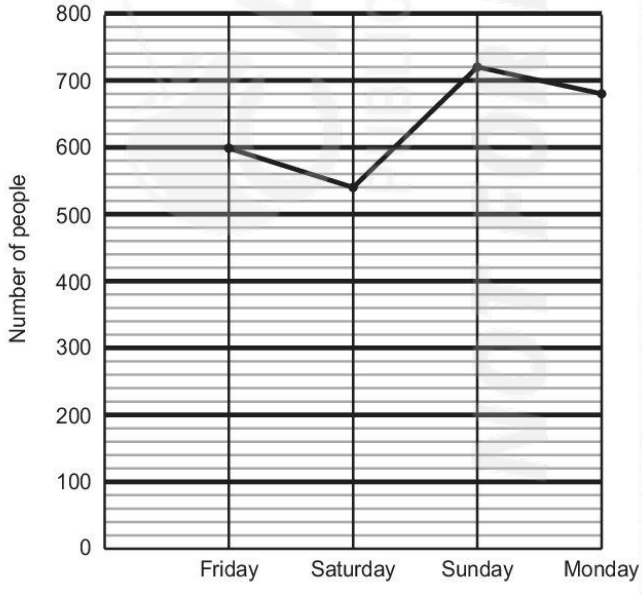
(d) (0 × 3) + (1 × 5) + (2 × 7) + (3 × 13) + (4 × 11)
= 0 + 5 + 14 + 39 + 44
= 102

The pupils borrowed **102** books altogether.

Achieve

Exercise 1

1.

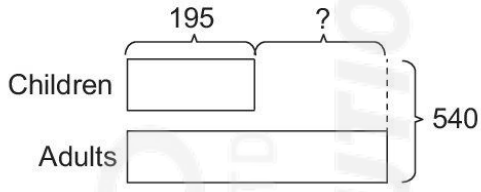


(a) **600** people attended the concert on Friday.

(b) 720 – 540 = 180
180 more people attended the concert on Sunday than on Saturday.

(c) 680 – 540 = 140
140 fewer people attended the concert on Saturday than on Monday.

(d)



540 – 195 = 345
345 adults attended the concert on Saturday.

345 – 195 = 150

150 more adults than children attended the concert on that day.

(e) 345 × $84 = $28 980
195 × $38 = $7410
$28 980 + $7410 = $36 390

$36 390 was collected from the sales of concert tickets on Saturday.

2.

	Food	Clothings	Transport	Total
Cheryl	$25	$65	$30	$120
Ellen	$30	$50	$25	$105
Jennifer	$40	$15	$20	$75

(a) $25 + $65 + $30 = $120

Cheryl's total expenditure for the week was **$120**.

(b) $30 + $50 + $25 = $105 (Ellen)
$40 + $15 + $20 = $75 (Jennifer)

Jennifer spent the least in the week.

(c) $120 – $75 = $45

Cheryl spent **$45** more than Jennifer.

(d) $105 – $75 = $30

Jennifer spent **$30** less than Ellen.

(e) $25 + $65 = $90 (Cheryl)
$30 + $50 = $80 (Ellen)
$40 + $15 = $55 (Jennifer)

Cheryl spent the most on food and clothings.

(f) $65 + $50 + $15 = $130

The 3 girls spent **$130** on clothings in the week.

(g) $120 + $105 + $75 = $300

The total expenditure of the 3 girls was **$300**.

3.

	English	Chinese	Malay	Total
4A	50	80	60	190
4B	60	90	80	230
4C	80	90	50	220
4D	65	70	70	205

(a) 65 + 70 + 70 = 205

There are **205** storybooks in Class 4D.

(b) 50 + 80 + 60 = 190
205 – 190 = 15

There **15** more storybooks in Class 4D than in Class 4A.

(c) 80 + 90 + 50 = 220 (Class 4C)
60 + 90 + 80 = 230 (Class 4B)
230 – 220 = 10

There are **10** fewer storybooks in Class 4C than in Class 4B.

(d) 80 + 90 + 90 + 70 = 330

There are **330** Chinese storybooks in all the classes.

(e) Class **4C** has the most number of English storybooks.

(f) Class **4C** has the least number of Malay storybooks.

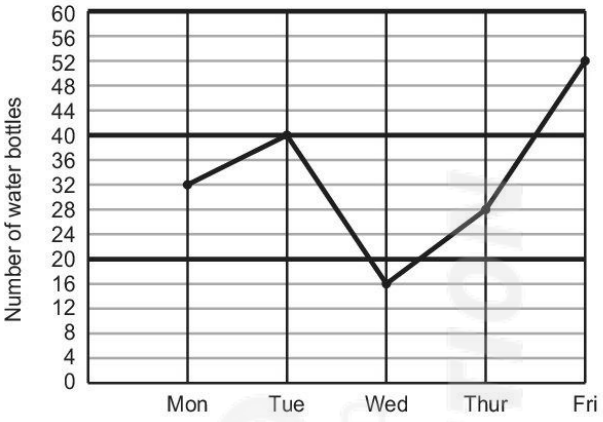
(g) 190 + 230 + 220 + 205 = 845

There are **845** storybooks in all the classes.

Challenge

Exercise 1

1. (a)



(b) 52 + 44 = 96

Auntie Joanne and Mrs Lim sold **96** water bottles altogether on Friday.

(c) Mrs Lim sold more water bottles than Auntie Joanne on **Wednesday**.

(d) Auntie Joanne sold more than 50 water bottles on **Friday**.

(e) Mrs Lim sold fewer than 20 water bottles on **Monday**.

(f) 32 + 40 + 16 + 28 + 52 = 168
Auntie Joanne sold 168 water bottles.

10 + 27 + 24 + 22 + 44 = 127
Mrs Lim sold 127 water bottles.

168 – 127 = 41

Auntie Joanne sold **41** more water bottles than Mrs Lim during the five days.

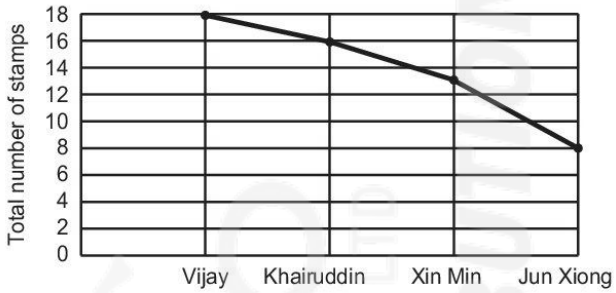
(g) 40 – 27 = 13

Mrs Lim must sell **13** more water bottles.

2. (a)

Child	50-cent stamps		20-cent stamps		Total number of stamps
	Number	Cost	Number	Cost	
Vijay	8	**$4**	10	**$2**	**18**
Khairuddin	4	**$2**	12	**$2.40**	**16**
Xin Min	6	**$3**	7	**$1.40**	**13**
Jun Xiong	3	**$1.50**	5	**$1**	**8**

(b)



(c) $4 + $2 = $6

Vijay spent **$6** on the stamps altogether.

(d) **Vijay** bought the most number of stamps.

(e) Vijay: $4 + $2 = $6
Khairuddin: $2 + $2.40 = $4.40
Xin Min: $3 + $1.40 = $4.40
Jun Xiong: $1.50 + $1 = $2.50

Jun Xiong spent the least number on the stamps.

(f) **Khairuddin** and **Xin Min** spent the same amount on the stamps.

(g) **Vijay** spent more on his stamps.

(h) $4.40 – $2.50 = $1.90

Khairuddin spent **$1.90** more than Jun Xiong on the stamps.

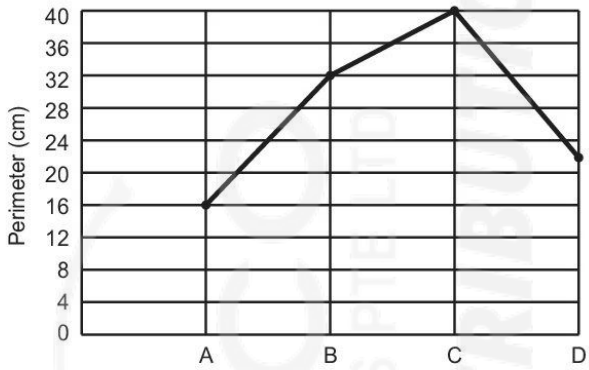
(i) $5 – $4.40 = $0.60

Xin Min had **$0.60** left after buying the stamps.

3. (a)

Rectangle	Length	Breadth	Perimeter	Area
A	5 cm	3 cm	5 + 3 + 5 + 3 = **16 cm**	5 × 3 = **15 cm²**
B	10 cm	6 cm	10 + 6 + 10 + 6 = **32 cm**	10 × 6 = **60 cm²**
C	12 cm	8 cm	12 + 8 + 12 + 8 = **40 cm**	12 × 8 = **96 cm²**
D	7 cm	4 cm	7 + 4 + 7 + 4 = **22 cm**	7 × 4 = **28 cm²**

(b)



(c) 96 cm^2 – 15 cm^2 = 81 cm^2

The difference between the area of Rectangle C and Rectangle A is **81 cm^2**.

(d) 32 cm + 22 cm = 54 cm

The total perimeter of Rectangle A and Rectangle D is **54 cm**.

(e) Required fraction = $\frac{15}{60}$

= $\frac{1}{4}$

The required fraction is $\frac{1}{4}$.

4. (a)

Number of questions answered correctly	1	2	3	4	5	6	7	8	9	10
Number of pupils	**2**	**4**	**2**	**0**	**3**	**7**	**8**	**5**	**5**	**4**

(b) 2 + 4 + 2 + 0 + 3 + 7 + 8 + 5 + 5 + 4 = 40

40 pupils attempted the IQ Quiz.

(c) 2 + 4 + 2 + 0 = 8

8 pupils answered only 4 or fewer questions correctly.

(d) 3 + 7 + 8 + 5 + 5 + 4 = 32

32 pupils answered 5 or more questions correctly.

(e) Required fraction

= $\frac{3 + 7}{40}$

= $\frac{10}{40}$

= $\frac{1}{4}$

$\frac{1}{4}$ of the pupils answered 5 or 6 questions correctly.

(f) Required fraction

= $\frac{8}{40}$

= $\frac{1}{5}$

$\frac{1}{5}$ of the pupils answered 7 questions correctly.

(g) Required fraction

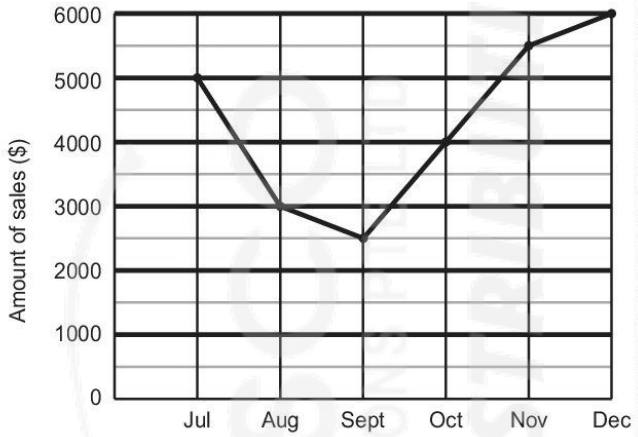
$$= \frac{5 + 5 + 4}{40}$$

$$= \frac{14}{40}$$

$$= \frac{7}{20}$$

$\frac{7}{20}$ of the pupils answered 8 or more questions correctly.

5. (a)



(b) $5500 – $4000 = $1500

The sales increased by **$1500** between October and November.

(c) $5000 – $3000 = $2000

The sales decreased by **$2000** between July and August.

(d) The sales increased the least between **November** and **December**.

(e) The sales decrease the least between **August** and **September**.

(f) $2 \times \$3000 = \$6000$

The sales in **December** were twice that of August.

(g) $6000 – $2500 = $3500

The difference in the sales between September and December was **$3500**.

(h) $5000 + $3000 + $2500 + $4000 + $5500 + $6000 = $26 000

The total sales of the cameras sold between July and December were **$26 000**.

Unit 11 Time

Drills

Exercise 1

1. (a) 20 s later
   (b) 25 s later
   (c) 50 s later

2. (a) 5 s later
   (b) 25 s later
   (c) 45 s later

Exercise 2

1. (a) 

7.10 p.m.

(b) 

7.11 p.m.

(c) 

7.12 p.m.

2. (a) 

8.05 a.m.

(b) 

8.06 a.m.

(c) 

8.07 a.m.

Exercise 3

1. (a) 65 s (b) 90 s
   (c) 145 s (e) 130 s
   (e) 230 s (f) 345 s
   (g) 615 s (h) 1205 s

2. (a) 1 min 25 s
   (b) 1 min 40 s
   (c) 2 min 15 s
   (d) 2 min 30 s
   (e) 3 min 25 s
   (f) 4 min 20 s
   (g) 5 min 45 s
   (h) 6 min 40 s

Exercise 4

1. (a) 5.45 a.m.
   (b) 5.45 p.m.
   (c) 05 45
   (d) 17 45

2. (a) 11.20 a.m.
   (b) 11.20 p.m.
   (c) 11 20
   (d) 23 20

3. (a) 3.05 a.m.
   (b) 3.05 p.m.
   (c) 03 05
   (d) 15 05

4. (a) 9.30 a.m.
   (b) 9.30 p.m.
   (c) 09 30
   (d) 21 30

5. (a) 1.35 a.m.
   (b) 1.35 p.m.
   (c) 01 35
   (d) 13 35

6. (a) 7.55 a.m.
   (b) 7.55 p.m.
   (c) 07 55
   (d) 19 55

Perform

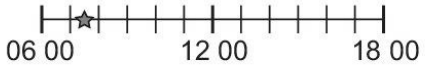
Exercise 1

1. 

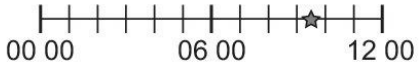
   15 30 is the same as **3.30 p.m.**

2. 

   22 30 is the same as **10.30 p.m.**

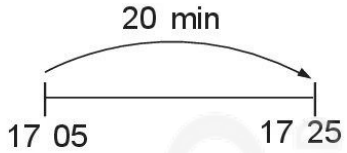
3. 

   07 30 is the same as **7.30 a.m.**

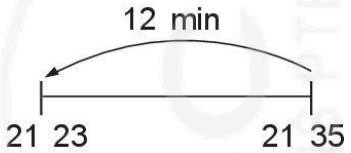
4. 

   09 30 is the same as **9.30 a.m.**

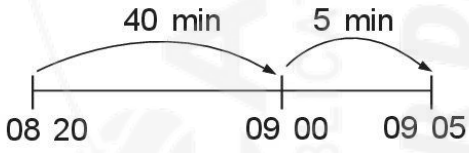
Exercise 2

1. 

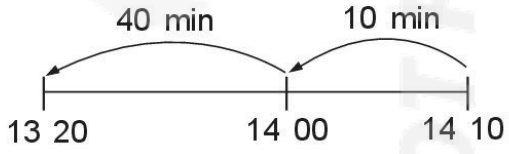
   Michael reached home at **17 25**.

2. 

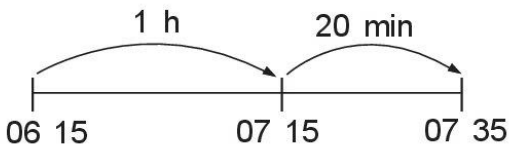
   Ahmad left his house at **21 23**.

3. 

   Jia Ying finished baking at **09 05**.

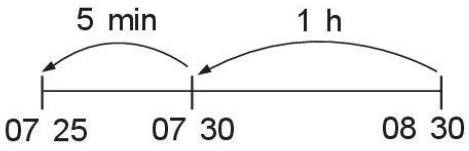
4. 

   Terence started to fold the paper aeroplanes at **13 20**.

5. 

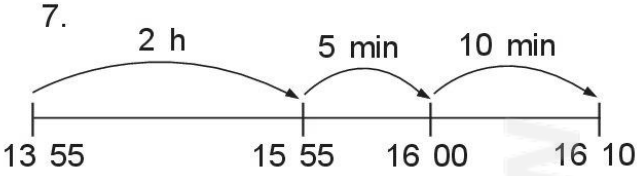
   She reached her office at **07 35**.

6.



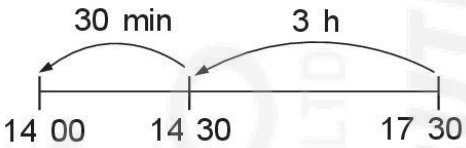
Jack left his house at **07 25**.

7.



The movie ended at **16 10**.

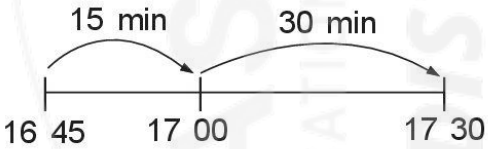
8.



The workshop started at **14 00**.

Exercise 3

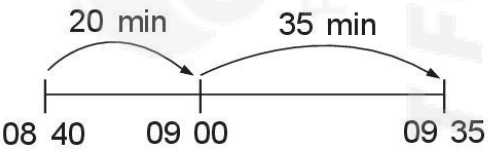
1.



15 min + 30 min = 45 min

Sean's drum lesson lasted **45 min**.

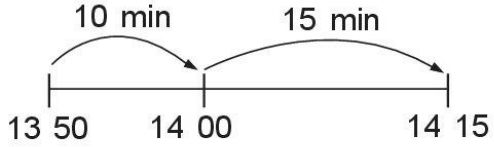
2.



20 min + 35 min = 55 min

Marcus took **55 min** to complete the test.

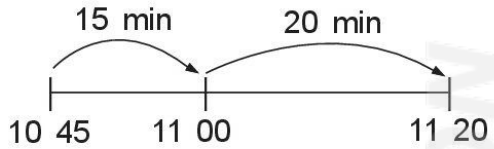
3.



10 min + 15 min = 25 min

Shanti took **25 min** to reach home.

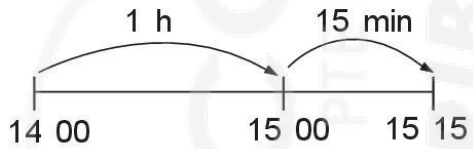
4.



15 min + 20 min = 35 min

Lynda took **35 min** to bake the cupcakes.

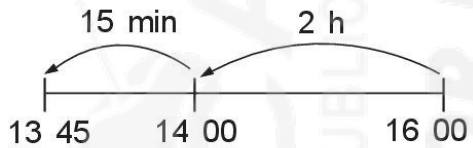
5.



1 h + 15 min = 1 h 15 min

Natalie's ballet lesson lasted **1 h 15 min**.

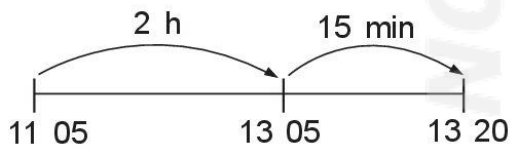
6.



2 h + 15 min = 2 h 15 min

Kumar took **2 h 15 min** to do his homework.

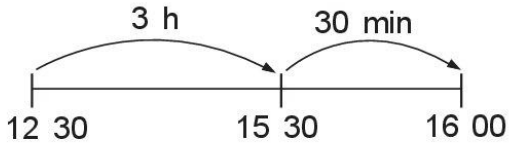
7.



2 h + 15 min = 2 h 15 min

Mala took **2 h 15 min** to roast the turkey.

8.



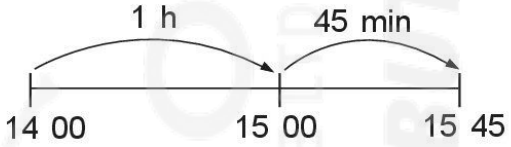
3 h + 30 min = 3 h 30 min

The party lasted **3 h 30 min**.

Achieve

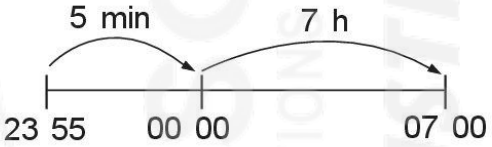
Exercise 1

1. 1 h 15 min + 30 min
= 1 h 45 min



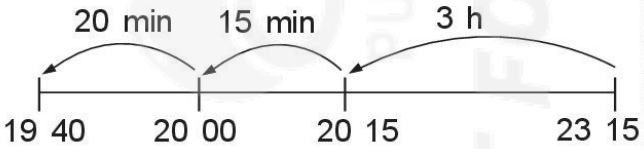
Her ballet lesson ended at **15 45**.

2.



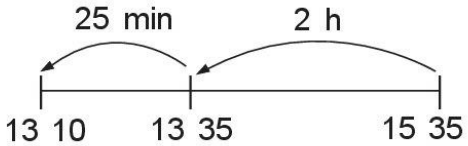
The journey was **7 h 5 min**.

3. 3 h 20 min + 15 min
= 3 h 35 min



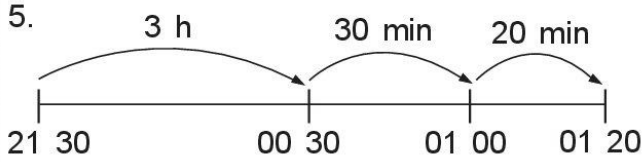
She left home at **19 40**.

4. 2 h 5 min + 20 min
= 2 h 25 min



He met his friends at **13 10**.

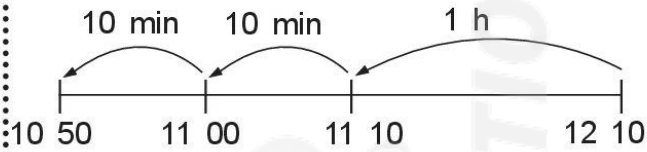
5.



3 h + 30 min + 20 min = 3 h 50 min
3 h 50 min – 10 min = 3 h 40 min

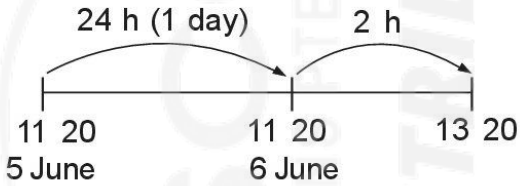
The party lasted **3 h 40 min**.

6. 5 min + 1 h 15 min = 1 h 20 min



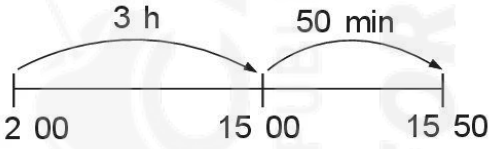
He started to warm-up at **10 50**.

7.

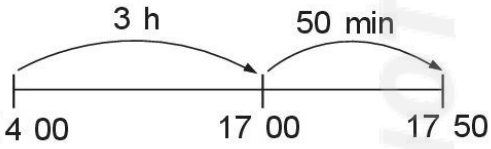


Sharlene's birthday celebration was on 6 June at **13 20**.

8. Singapore time:

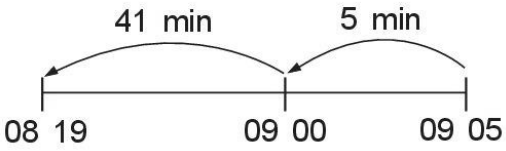


Brisbane time:



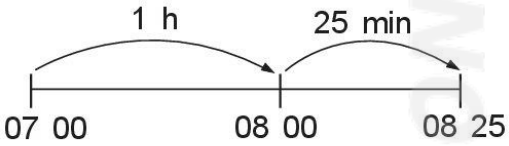
The time then in Brisbane was **17 50**.

9. 10 min + 36 min = 46 min

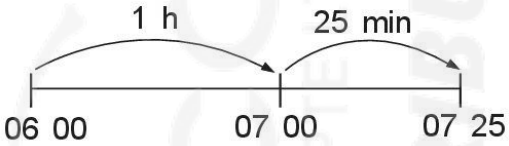


She left her house at **08 19**.

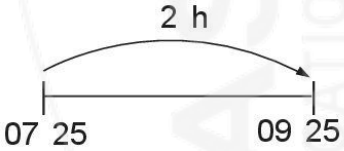
10. Singapore time:



Bangkok time:

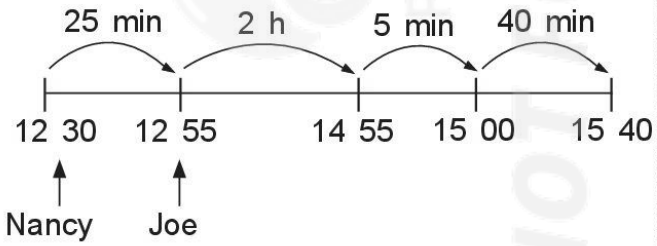


Bangkok time:



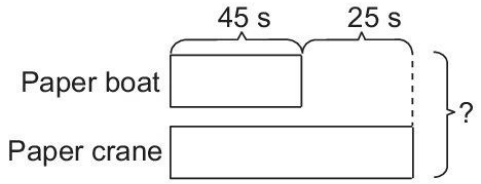
The flight actually took **2 h**.

11.



Joe completed his homework at **15 40**.

12.

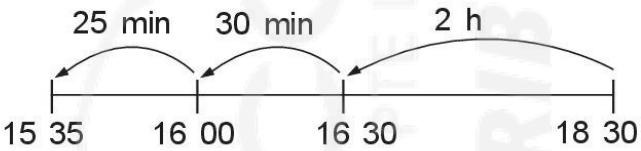


45 s + 25 s = 70 s
She took 70 s to fold a paper crane.

45 s + 70 s = 115 s
= 1 min 55 s

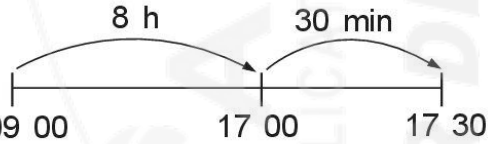
She took **1 min 55 s** to fold both items altogether.

13. 5 × 35 min = 175 min
= 2 h 55 min
6.30 p.m. = 18 30



She started sewing the first scarf at **15 35**.

14.



1 h + 25 min + 25 min = 1 h 50 min

8 h 30 min – 1 h 50 min
= 7 h 90 min – 1 h 50 min
= 6 h 40 min

She works **6 h 40 min** each day.

Challenging Problems

1. $39.60 ÷ 8 = $4.95
   5 × $4.95 = $24.75

   Sean has **$24.75**.

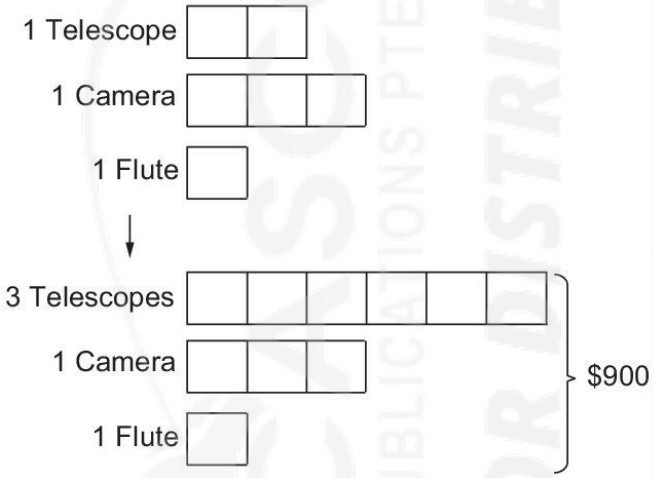
2. 3 × $1860 = $5580
   $5580 ÷ 5 = $1116

   Each child will receive **$1116**.

3. 5 × 3.5 m = 17.5 m
   17.5 m ÷ 7 = 2.5 m

   The length of each piece is **2.5 m**.

4.



   10 units = $900
   1 unit = $900 ÷ 10
   = $90
   3 units = 3 × $90
   = $270

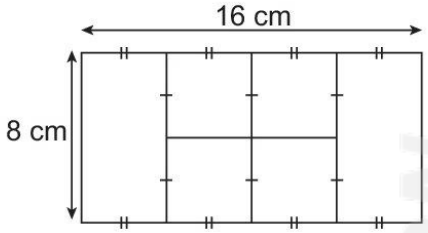
   A camera costs $270.

   4 × $270 = $1080

   The cost of 4 such cameras is **$1080**.

5. Length of each square
   = 16 cm ÷ 4
   = 4 cm

   Length of figure = 4 × 4 cm = 16 cm
   Breadth of figure = 2 × 4 cm = 8 cm

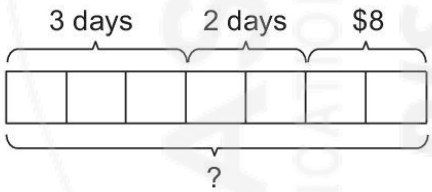


   Area of figure
   = 16 × 8
   = 128 cm^2

   The area of the entire figure is **128 cm^2**.

6. $1 - \frac{4}{7} = \frac{3}{7}$

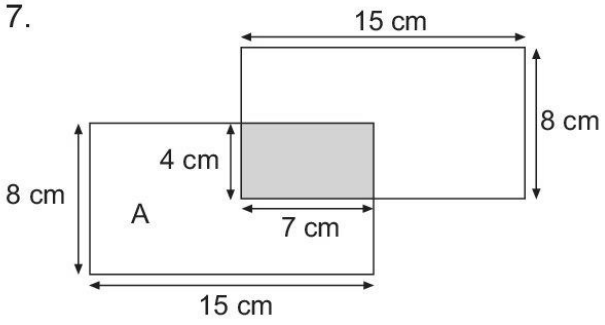
   Xiao Ling used $\frac{3}{7}$ of her allowance for 3 days.



   2 units = $8
   1 unit = $8 ÷ 2
   = $4
   7 units = 7 × $4
   = $28

   Xiao Ling was given **$28** for the week.

7.

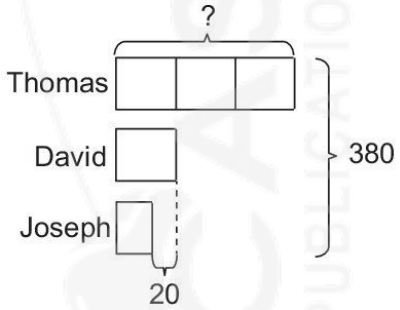


Area of A
= Area of big rectangle
– Area of shaded rectangle
= (15 × 8) – (7 × 4)
= 120 cm^2 – 28 cm^2
= 92 cm^2

Total area of unshaded parts
= 2 × Area of A
= 2 × 92
= 184 cm^2

The total area of the unshaded parts of the figure is **184 cm^2**.

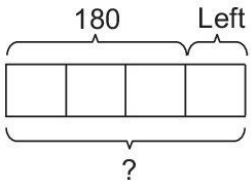
8.



5 units = 380 + 20
= 400 stickers
1 unit = 400 ÷ 5
= 80 stickers
3 units = 3 × 80
= 240 stickers

Thomas collected **240** stickers.

9.

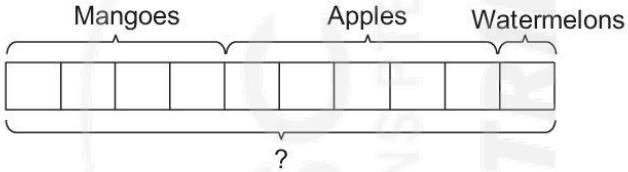


3 units = 180 erasers
1 unit = 180 ÷ 3
= 60 erasers
4 units = 4 × 60
= 240 erasers

240 ÷ 6 = 40

There were **40** erasers in each box.

10. 0.4 = $\frac{4}{10}$, 0.5 = $\frac{5}{10}$

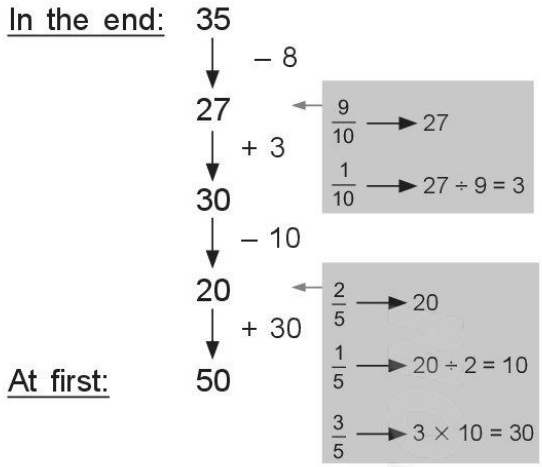


5 units – 1 unit = 4 units

4 units = 60 fruits
1 unit = 60 ÷ 4
= 15 fruits
10 units = 10 × 15
= 150 fruits

There were **150** fruits in the basket.

11. Work backwards.



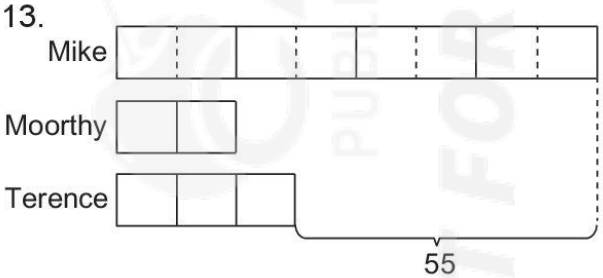
50 passengers got on the bus at the interchange.

12. Use guess and check.

Number of cups delivered	Amount received	Number of cups spilled	Amount deducted	Total amount earned	Check
96	96 × 20¢ = 1920¢ = $19.20	4	4 × 30¢ = 120¢ = $1.20	$19.20 – $1.20 = $18	✗
95	95 × 20¢ = 1900¢ = $19	(5)	5 × 30¢ = 150¢ = $1.50	$19 – $1.50 = $17.50	✓

Ah Teck spilled **5** cups of coffee.

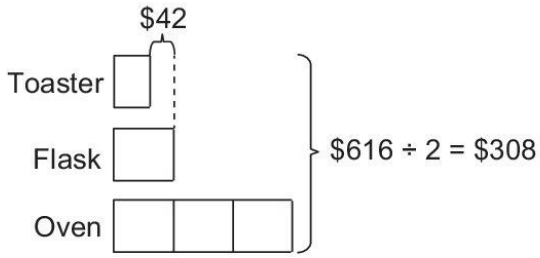
13.



5 units = 55 marbles
1 unit = 55 ÷ 5
= 11 marbles
2 units = 2 × 11
= 22 marbles (Moorthy)
3 marbles = 3 × 11
= 33 marbles (Terence)
8 units = 8 × 11
= 88 marbles (Mike)

Moorthy has **22** marbles, Terence has **33** marbles and Mike has **88** marbles.

14.

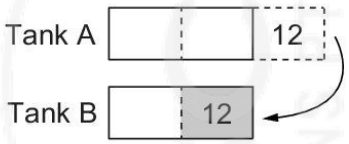


5 units = $308 + $42
= $350
1 unit = $350 ÷ 5
= $70
8 units = 8 × $70
= $560

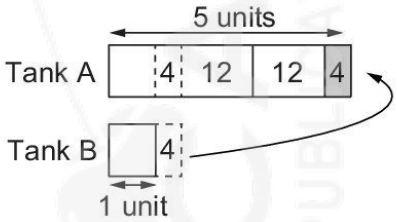
$616 – $560 = $56

She would have **$56** left.

15. 1st situation:



2nd situation:



4 units = 4 + 12 + 12 + 4
= 32 fish
1 unit = 32 ÷ 4
= 8 fish
5 units = 5 × 8
= 40 fish

40 – 4 = 36
There are **36** fish in Tank A.

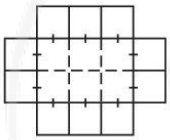
8 + 4 = 12
There are **12** fish in Tank B.

16.

Multiples of 4 plus 2	Multiples of 5	Multiples of 8 plus 6
6	5	14
10	10	22
14	15	(30)
18	20	38
22	25	
26	(30)	
(30)	35	
34	40	
38		

There were **30** sweets in the packet.

17.

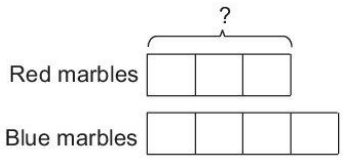


Length of each square = 40 cm ÷ 10
= 4 cm
Area of 1 square = 4 × 4
= 16 cm^2

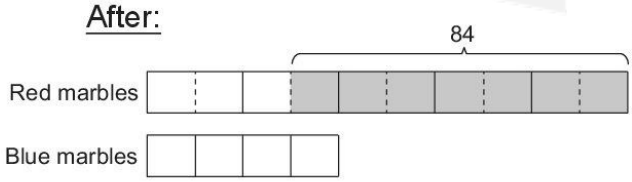
Area of 16 squares
= 16 × 16
= 256 cm^2

The area of whole figure is **256 cm^2**.

18. <u>At first:</u>



<u>After:</u>



7 units = 84 marbles
1 unit = 84 ÷ 7
= 12 marbles
3 units = 3 × 12
= 36 marbles

He had **36** red marbles at first.

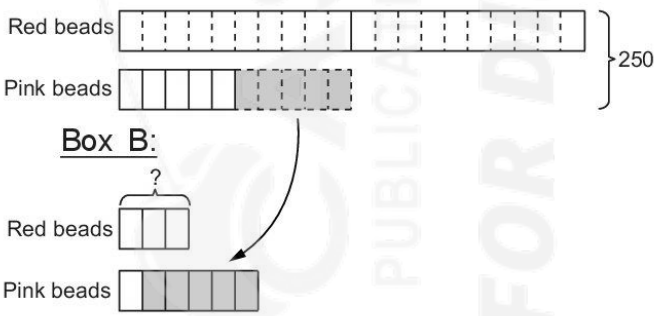
19. $14.90 + $0.20 = $15.10
She had $15.10 at first.

Use guess and check.

Number of 10¢ coins	Value	Number of 50¢ coins	Value	Total value	Check
30	30 × 10¢ = 300¢ = $3	23	23 × 50¢ = 1150¢ = $11.50	$3 + $11.50 = $14.50	✗
31	31 × 10¢ = 310¢ = $3.10	24	24 × 50¢ = 1200¢ = $12	$3.10 + $12 = $15.10	✓

She had **31** ten-cent coins and **24** fifty-cent coins at first.

20. <u>Box A:</u>



25 units = 250 marbles
1 unit = 250 ÷ 25
= 10 marbles
3 units = 3 × 10
= 30 marbles

There were **30** red beads in Box B at first.

Trial Examination 1

Section A

1. **(2)**
   78 ÷ 6 = 13
   78 is exactly divisible by 6.
   6 is a factor of 78.

2. **(2)**
   50 hundreds – 4375
   = 5000 – 4375
   = 625

   625 + 12 tens
   = 625 + 120
   = 745

3. **(1)**
   5360 ÷ 8 = 670
   670 ÷ 5 = 134

4. **(4)**
   43 hundreds ÷ 8
   = 4300 ÷ 8
   = 537 R 4
   537 × 4 = 2148

5. **(4)**
   $\frac{2}{3} + \frac{5}{12} + \frac{1}{4}$
   $= \frac{8}{12} + \frac{5}{12} + \frac{3}{12}$
   $= \frac{16}{12}$
   $= 1\frac{4}{12}$
   $= 1\frac{1}{3}$

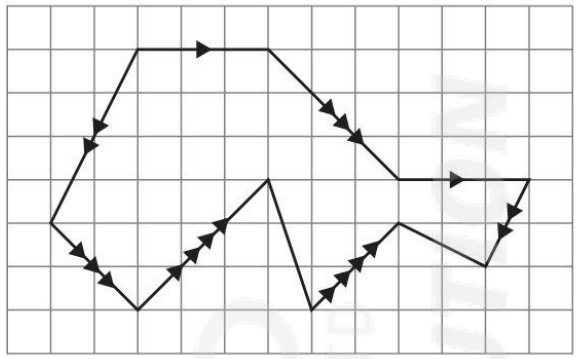
6. **(4)**
   \$50 + \$40 + \$45 + \$35 = \$170

   The 4 girls spent \$170 altogether in April.

7. **(2)**
   \$45 – \$35 = \$10
   Natalie spent \$10 more than Tammy.

8. **(1)**
   $\angle a$ is greater than a right angle.

9. **(4)**



   There are 4 pairs of parallel lines in the figure.

10. **(2)**
    Length of rectangle
    = 64 cm^2 ÷ 5 cm
    = 12.8 cm

11. **(1)**
    3rd multiple of 5 = 3 × 5 = 15
    7th multiple of 3 = 7 × 3 = 21
    Difference = 21 – 15
    = 6

12. **(4)**
    132 hundredths + 9 tenths
    = 1.32 + 0.9
    = 2.22

    2.22 – 8 tenths
    = 2.22 – 0.8
    = 1.42

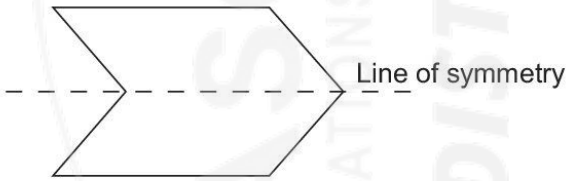
13. **(2)**
2.48
$= 2\frac{48}{100}$
$= 2\frac{24}{50}$
$= 2\frac{12}{25}$

14. **(1)**
In 57.39, the value of the digit 9 is 0.09.

15. **(2)**
3.2 kg + 5.12 kg + 2.48 kg = 10.8 kg
The total mass of the fruits Monica bought was 10.8 kg.

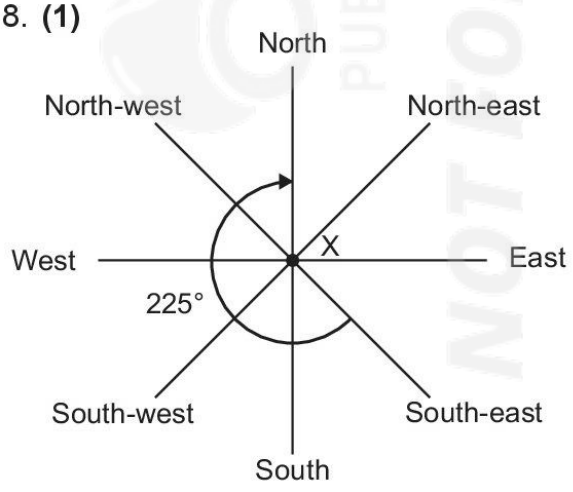
16. **(3)**
$7 \times 1.45\ l = 10.15\ l$
He drinks 10.15 l of water in a week.

17. **(1)**



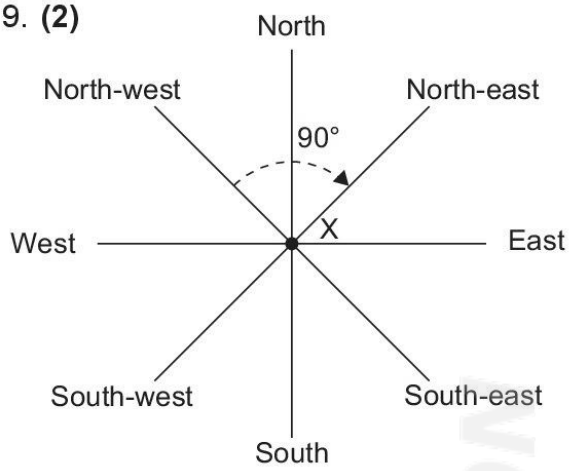
The figure has 1 line of symmetry.

18. **(1)**



He is facing north now.

19. **(2)**



She was facing north-east at first.

20. **(4)**
Length
= 120 m^2 ÷ 10 m
= 12 m

Perimeter
= 12 + 10 + 12 + 10
= 44 m

Section B

21. 32 tens + 70 hundreds
= 320 + 7000
= 7320
= 732 tens

There are **732** tens in the sum of 32 tens and 70 hundreds.

22. 697 tens – 577 tens
= 6970 – 5770
= 1200
= 12 hundreds

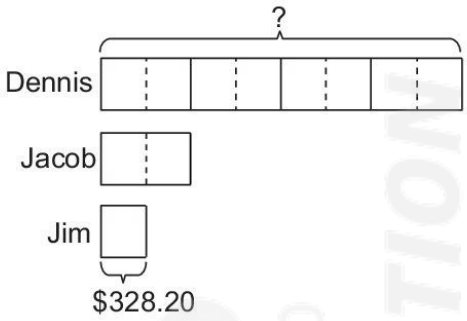
697 tens is **12** hundreds more than 577 tens.

23. 0.672, 6.2, $\frac{3}{5} = \frac{6}{10}$ = 0.6, 0.072

The numbers arranged from the smallest are:

0.072, $\frac{3}{5}$, 0.672, 6.2

24.



1 unit = $328.20
8 units = 8 × $328.20
= $2625.60

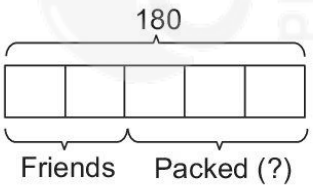
Dennis saved **$2625.60**.

25. 5 pens + 2 calculators ⟶ $17.60
2 pens + 2 calculators ⟶ $14

3 pens ⟶ $17.60 − $14 = $3.60
1 pen ⟶ $3.60 ÷ 3 = $1.20
4 pens ⟶ 4 × $1.20 = $4.80

The cost of 4 such pens is **$4.80**.

26.

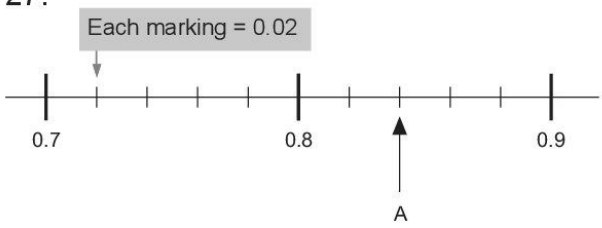


5 units = 180 tarts
1 unit = 180 ÷ 5
= 36 tarts
3 units = 3 × 36
= 108 tarts

108 ÷ 6 = 18

She got **18** boxes of tarts.

27.



A = **0.84**

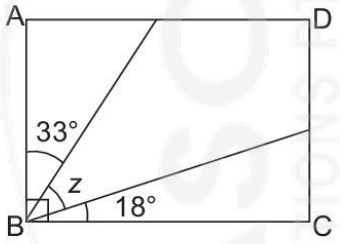
28. 31 − 21 = 10

Joseph sold **10** more cars than Jacob in December.

29. 21 + 25 = 46 (Jacob)
24 + 23 = 47 (Jonathan)
31 + 28 = 59 (Joseph)

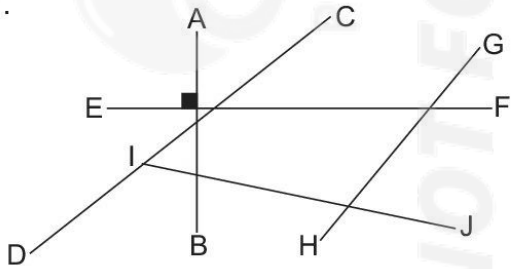
Joseph sold the most number of cars in the two months.

30.



∠ABC = 90° (∠s of a rectangle)
∠z = 90° − 33° − 18°
= **39°**

31.

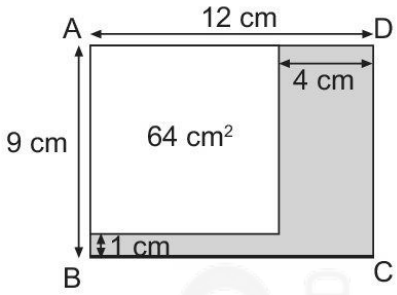


Line **EF** is perpendicular to AB.

32. Length + Breadth = 30 cm ÷ 2
Length + 7 cm = 15 cm
Length = 15 cm – 7 cm
= 8 cm

Area of rectangle
= 8 × 7
= **56 cm²**

33.



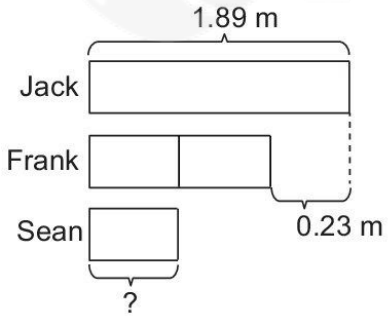
64 cm² = 8 cm × 8 cm
12 cm – 8 cm = 4 cm
9 cm – 8 cm = 1 cm

Perimeter of figure
= 4 + 9 + 12 + 1 + 8 + 8
= **42 cm**

34. 2.54 + 3.29 = 5.83
2.54 is 3.29 less than **5.83**.

35. $4\frac{3}{4} = 4\frac{75}{100}$
= 4.75
≈ **4.8 (nearest tenth)**

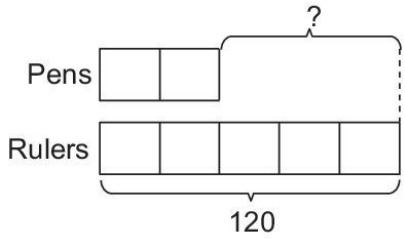
36.



2 units = 1.89 m – 0.23 m
= 1.66 m
1 unit = 1.66 m ÷ 2
= 0.83 m

Sean is **0.83 m** tall.

37. $0.4 = \frac{4}{10} = \frac{2}{5}$



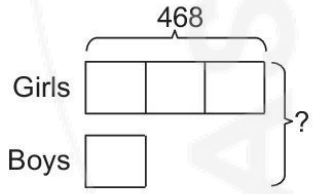
5 units = 120 items
1 unit = 120 ÷ 5
= 24 items
3 units = 3 × 24
= 72 items

There are **72** fewer pens than rulers.

38. 4 × 4.36 kg = 17.44 kg

The total mass of the carton of fruits is **17.44 kg**.

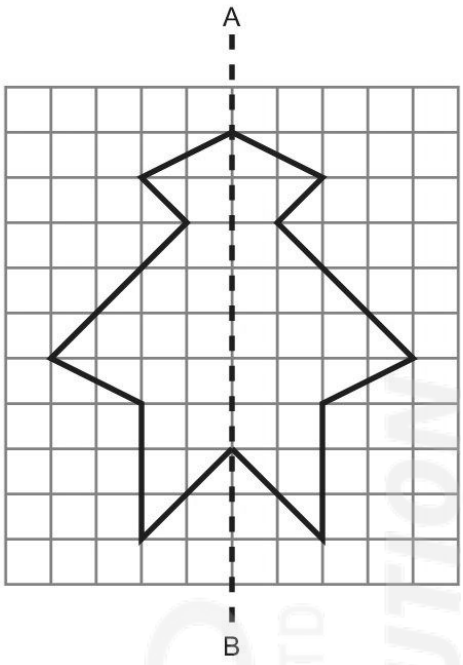
39.



3 units = 468 chicken
1 unit = 468 ÷ 3
= 156 children
4 units = 4 × 156
= 624 children

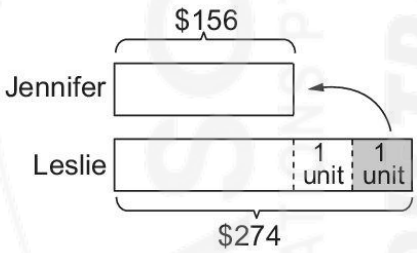
There are **624** children altogether.

40.



Section C

41.



2 units = $274 – $156
= $118
1 unit = $118 ÷ 2
= $59

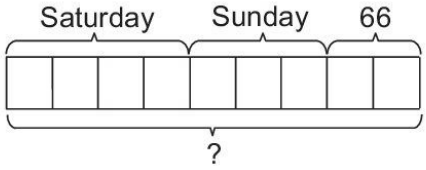
Leslie must give **$59** to Jennifer so that each of them has the same amount of money.

42. Perimeter of field
= 65 + 48 + 65 + 48
= 226 m

Cost of fencing
= 226 × $12
= $2712

The cost of fencing is **$2712**.

43. $\frac{1}{3} = \frac{3}{9}$



2 units = 66 balloons
1 unit = 66 ÷ 2
= 33 balloons
9 units = 9 × 33
= 297 balloons

Sam had **297** balloons at first.

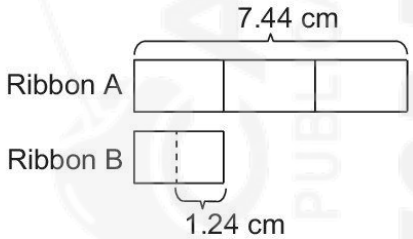
44.

× 2 (1 box + 1 container ⟶ 3.25 kg
2 boxes + 2 containers ⟶ 2 × 3.25 kg
= 6.5 kg
5 boxes + 2 containers ⟶ 14 kg

3 boxes ⟶ 14 kg – 6.5 kg = 7.5 kg
1 box ⟶ 7.5 kg ÷ 3 = 2.5 kg

The mass of each box is **2.5 kg**.

45. After:



8.68 cm – 1.24 cm = 7.44 cm

3 units = 7.44 cm
1 unit = 7.44 cm ÷ 3
= 2.48 cm

2.48 cm – 1.24 cm = 1.24 cm

The original length of Ribbon B is **1.24 cm**.

Trial Examination 2

Section A

1. **(2)**
38 495 ← The digit 8 is in the thousands place.

2. **(3)**
24 hundreds + 325 tens + 3724
= 2400 + 3250 + 3724
= 9374
≈ 9400 (nearest hundred)

3. **(4)**
253 ÷ 7 = 36 R 1

4. **(3)**
165 × $2 = $330
$330 + $102 = $432
He had $432 at first.

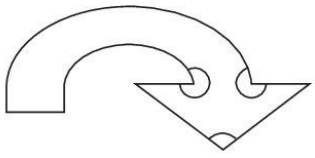
5. **(3)**
$6\frac{1}{2} = \frac{13}{2} = \frac{26}{4}$

There are 26 quarters in $6\frac{1}{2}$.

6. **(3)**
175 + 250 + 150 + 125 = 700
The company made 700 puppets in the four months altogether.

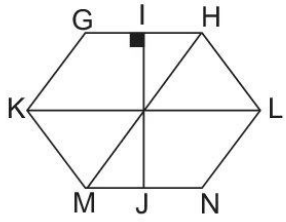
7. **(2)**
250 – 125 = 125
The company made 125 fewer puppets in April than in February.

8. **(1)**



There are 3 angles greater than a right angle in the figure.

9. **(3)**



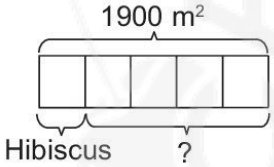
Line IJ is perpendicular to GH.

10. **(1)**
Area of rectangle P
= 13 × 4
= 52 cm²

Area of rectangle Q
= 9 × 5
= 45 cm²

Difference
= 52 cm² – 45 cm²
= 7 cm²

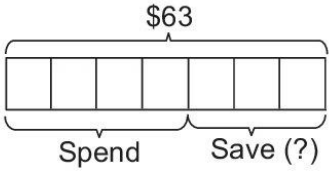
11. **(3)**
Area of land
= 50 × 38
= 1900 m²



5 units = 1900 m²
1 unit = 1900 m² ÷ 5
= 380 m²
4 units = 4 × 380 m²
= 1520 m²

1520 m² of the field is not planted with hibiscus plants.

12. **(3)**



7 units = $63
1 unit = $63 ÷ 7
= $9
3 units = 3 × $9
= $27

He saves $27 every day.

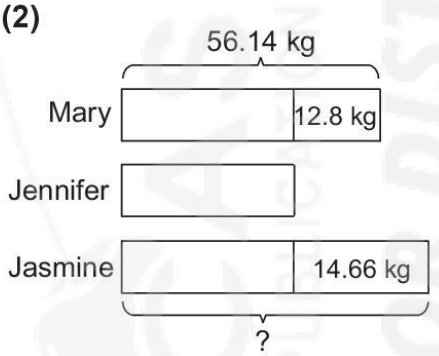
7 × $27 = $189

He saves $189 in a week.

13. **(3)**

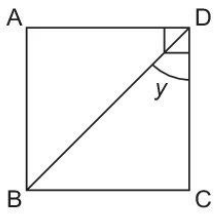
60.9 – 43.51 = 17.39
17.39 + 28.56 = 45.95
≈ 46.0 (1 d.p.)

14. **(2)**



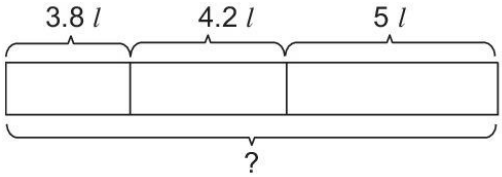
56.14 kg – 12.8 kg = 43.34 kg
43.34 kg + 14.66 kg = 58 kg
Jasmine's mass is 58 kg.

15. **(2)**



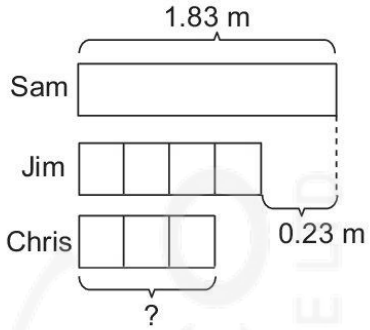
∠ADC = 90° (∠s of a square)
∠*y* = 90° ÷ 2 (BD cuts the square into half)
= 45°

16. **(4)**



3.8 *l* + 4.2 *l* + 5 *l* = 13 *l*
He had 13 *l* of paint at first.

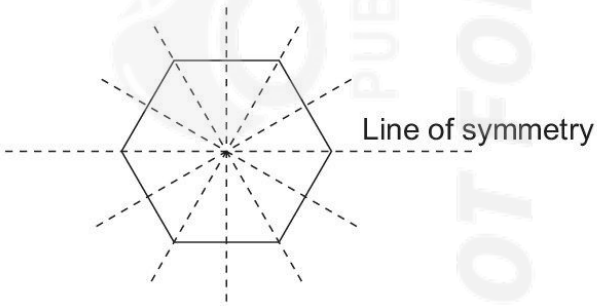
17. **(1)**



4 units = 1.83 m – 0.23 m
= 1.6 m
1 unit = 1.6 m ÷ 4
= 0.4 m
3 units = 3 × 0.4 m
= 1.2 m

Chris is 1.2 m tall.

18. **(4)**

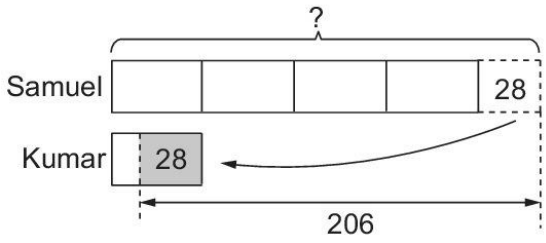


The figure has 6 lines of symmetry.

19. **(2)**

7 × 5 s = 35 s
35 seconds had passed.

20. **(4)**



3 units = 206 – 28 – 28
= 150 sweets
1 unit = 150 ÷ 3
= 50 sweets
4 units = 4 × 50
= 200 sweets

200 + 28 = 228

Samuel had 228 sweets at first.

Section B

21. 328 + 2046 + 5193 = 7567

The place value of the digit 5 is **hundreds**.

22. First three multiples of 7: 7, 14, 21
Product
= 7 × 14 × 21
= 98 × 21
= **2058**

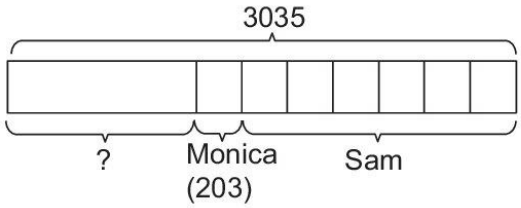
23.

33 700, 33 300, 32 900, 32 500, 32 100

32 900 – 400 = 32 500

The missing number is **32 500**.

24.



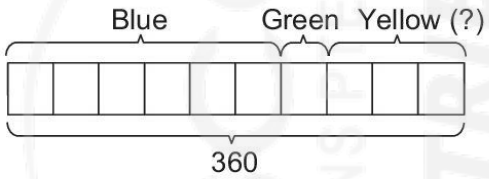
1 unit = 203 seashells
7 units = 7 × 203
= 1421 seashells

3035 – 1421 = 1614

She had **1614** seashells at first.

25. $12\frac{4}{11} = \frac{\mathbf{136}}{\mathbf{11}}$

26. $\frac{3}{5} = \frac{6}{10}$



10 units = 360 marbles
1 unit = 360 ÷ 10
= 36 marbles
3 units = 3 × 36
= 108 marbles

There are **108** yellow marbles.

27. 12 + 15 = 27 (Oranges)
1 + 4 = 5 (Durians)

27 – 5 = 22

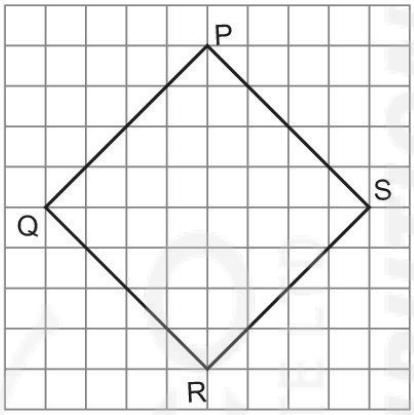
22 children prefer oranges to durians.

28. 11 + 12 = 23 (Apples)
12 + 15 = 27 (Oranges)
8 + 10 = 18 (Mangoes)

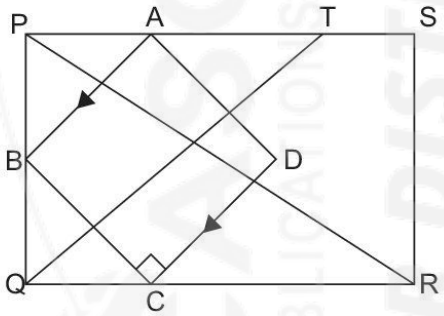
23 + 27 = 50 (Apples and Oranges)
50 – 18 = 32

32 children prefer apples and oranges to mangoes.

29.



30.



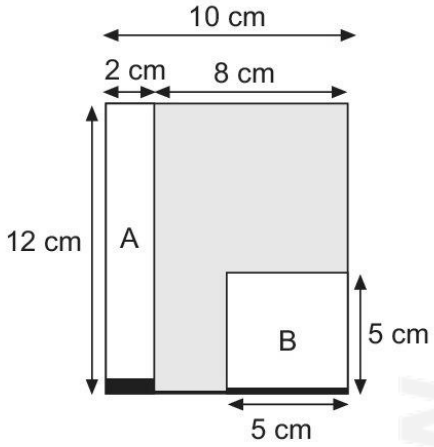
Line **CD** is perpendicular to BC and parallel to AB.

31. Length + Breadth = 216 cm ÷ 2
Length + 12 cm = 108 cm

Length = 108 cm – 12 cm
= 96 cm

Area of rectangle = 96 × 12
= **1152 cm²**

32.



Area of figure
= 12 × 10
= 120 cm²

Area of Rectangle A
= 12 × 2
= 24 cm²

Area of Square B
= 5 × 5
= 25 cm²

Area of shaded part of figure
= 120 cm² – 24 cm² – 25 cm²
= **71 cm²**

33. 23 + 0.9 + 0.17

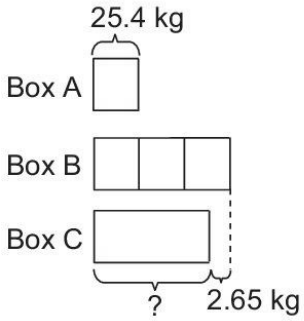
$= 23 + \frac{9}{10} + \frac{17}{100}$

$= 23 + \frac{90}{100} + \frac{17}{100}$

$= 23\frac{107}{100}$

$= \mathbf{24\frac{7}{100}}$

34.



1 unit = 25.4 kg
3 units = 3 × 25.4 kg
= 76.2 kg

76.2 kg – 2.65 kg = 73.55 kg

The mass of Box C is **73.55 kg**.

35. 430 hundredths + 357 tenths
= 4.3 + 35.7
= 40

40 – 100 tenths
= 40 – 10
= 30

The answer is **30**.

36.
3 pens + 2 notebooks ⟶ \$6.95
× 2
6 pens + 4 notebooks ⟶ 2 × \$6.95
= \$13.90
4 pens + 4 notebooks ⟶ \$11.40

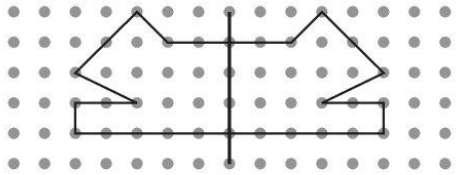
2 pens ⟶ \$13.90 – \$11.40 = \$2.50
1 pen ⟶ \$2.50 ÷ 2 = \$1.25

The cost of each pen is **\$1.25**.

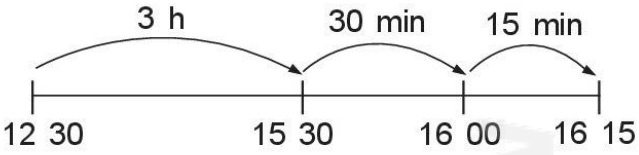
37. 6.5 *l* + 1.2 *l* = 7.7 *l*
7.7 *l* ÷ 7 = 1.1 *l*

There was **1.1 *l*** of rose drink in each jug.

38.



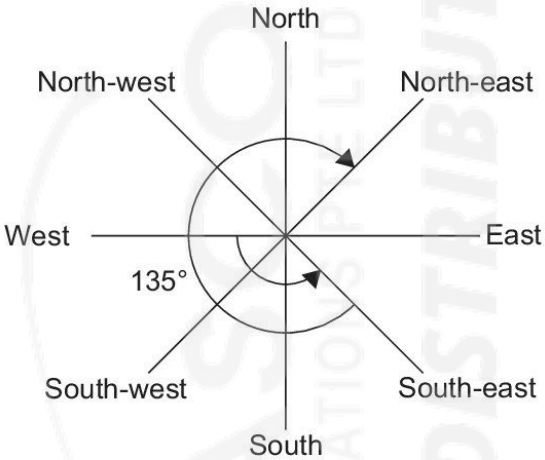
39.



3 h + 30 min + 15 min = 3 h 45 min

The party was **3 h 45 min** long.

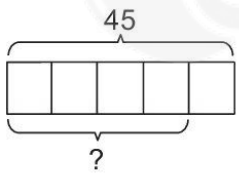
40.



He faces **north-east** in the end.

Section C

41.

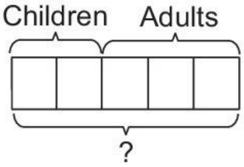


5 units = 45 dolls
1 unit = 45 ÷ 5
= 9 dolls
4 units = 4 × 9
= 36 dolls

36 × \$25 = \$900
\$1215 – \$900 = \$315
\$315 ÷ 9 = \$35

He sold each of the remaining dolls for **$35**.

42. $0.4 = \frac{4}{10} = \frac{2}{5}$

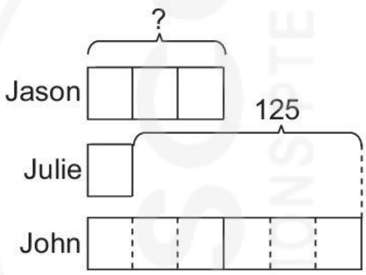


3 units – 2 units = 1 unit

1 unit = 87 people
5 units = 5 × 87
= 435 people

There were **435** people at the beach.

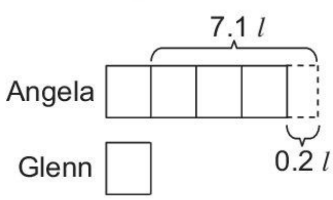
43.



5 units = 125 erasers
1 unit = 125 ÷ 5
= 25 erasers
3 units = 3 × 25
= 75 erasers

Jason collected **75** erasers.

44.

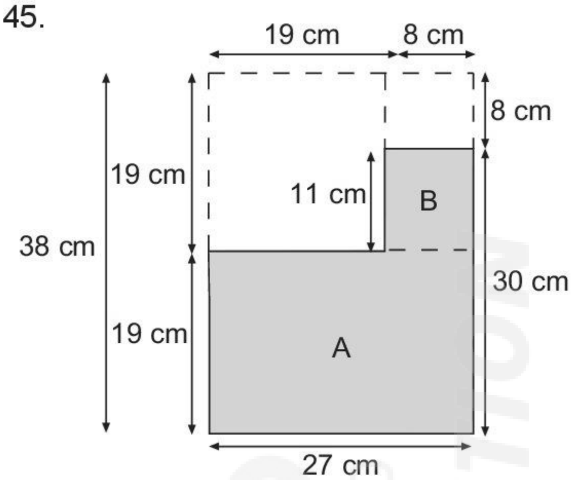


3 units = 7.1 *l* – 0.2 *l*
= 6.9 *l*
1 unit = 6.9 *l* ÷ 3
= 2.3 *l*
4 units = 4 × 2.3 *l*
= 9.2 *l*

9.2 *l* + 0.2 *l* = 9.4 *l*

Angela had **9.4 *l*** of lemonade at first.

45.



(a) Perimeter of remaining cardboard
= 30 + 27 + 30 + 27
= 114 cm

The perimeter of remaining cardboard was **114 cm**.

(b) Area of Rectangle A
= 27 × 19
= 513 cm^2

Area of Rectangle B
= 11 × 8
= 88 cm^2

Area of remaining cardboard
= 513 + 88
= 601 cm^2

The area of the remaining cardboard was **601 cm^2**.

Trial Examination 3

Section A

1. **(3)**

Multiples of 4: 4, 8, 12, 16, 20, 24, (28), 32, ...
Multiples of 7: 7, 14, 21, (28), 35, ...

28 is a common multiple of 4 and 7.

2. **(1)**
50 hundreds – 337 tens
= 5000 – 3370
= 1630
= 163 tens

163 tens must be subtracted from 50 hundreds to give 337 tens.

3. **(3)**
23 tens × 15
= 230 × 15
= 3450

3450 ÷ 5 = 690

The value of the digit 9 in the quotient is 90.

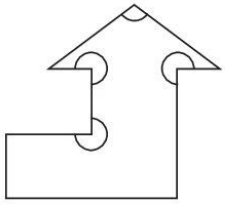
4. **(3)**
34 tens + 1758
= 340 + 1758
= 2098

2098 × 3 = 6294
≈ 6290 (nearest 10)

5. **(4)**

$1\frac{1}{2}$ turns = 60 s + 30 s
= 90 s

6. **(2)**



4 angles in the figure are greater than a right angle.

7. **(3)**

$6\frac{4}{10} = 6\frac{2}{5} = \frac{32}{5}$

There are 32 one fifths in $6\frac{4}{10}$.

8. **(3)**

$\frac{24}{32} = \frac{3}{4}$

Option (1) : $\frac{12}{16} = \frac{3}{4}$ (✓)

Option (2) : $\frac{6}{8} = \frac{3}{4}$ (✓)

Option (3) : $\frac{2}{4} = \frac{1}{2}$ (✗)

Option (4) : $\frac{3}{4}$ (✓)

9. **(4)**
Length = 96 cm^2 ÷ 8 cm
= 12 cm
Perimeter = 12 + 8 + 12 + 8
= 40 cm

10. **(3)**
Area of big square
= 13 × 13
= 169 cm^2

Area of shaded rectangle
= 9 × 4
= 36 cm^2

Area of shaded square
= 4 × 4
= 16 cm^2

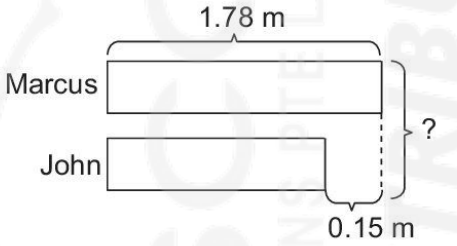
Area of unshaded part of square
= 169 – 36 – 16
= 117 cm^2

11. **(1)**
Sum = 1.73 + 1.24
= 2.97

12. **(4)**
Product = 0.74 × 6
= 4.44

13. **(1)**
$2.25 = 2\frac{25}{100}$
$= 2\frac{1}{4}$

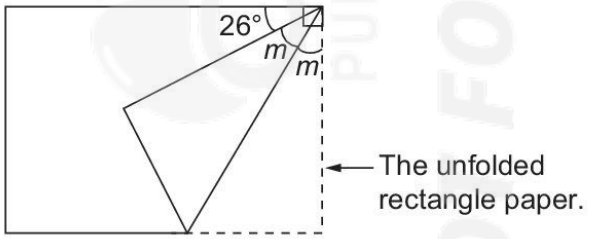
14. **(3)**



1.78 m – 0.15 m = 1.63 m
1.78 m + 1.63 m = 3.41 m

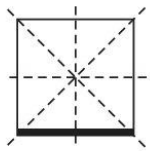
Their total height is 3.41 m.

15. **(2)**



90° – 26° = 64°
$\angle m$ = 64° ÷ 2
= 32°

16. **(4)**



A square has 4 lines of symmetry.

17. **(1)**
3 kg 800 g = 3800 g
3800 g ÷ 4 = 950 g

The mass of each hamper was 950 g.

18. **(3)**
27 × $14 = $378
$378 + $22 = $400

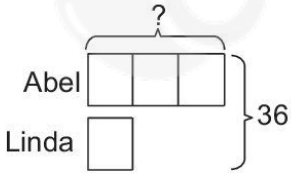
She had $400 at first.

19. **(3)**
14 × $110 = $1540

She earns $1540 in 14 days.

20. **(4)**
Total age 8 years ago
= 52 – 8 – 8
= 36 years

8 years ago:



4 units = 36 years
1 unit = 36 ÷ 4
= 9 years
3 units = 3 × 9
= 27 years

27 + 8 = 35

Abel is 35 years old now.

Section B

21. Multiples of 7: 7, 14, 21, 28, ...
Sum of first 4 multiples of 7
= 7 + 14 + 21 + 28
= **70**

22. 52 385 – 417 = **56 968**

23. 436 ÷ 7 = 62 R 2
324 tens + 2
= 3240 + 2
= **3242**

24. 5353 ÷ 8 = 669 R 1
Difference = 669 – 1
= **668**

25. DE = 12 cm – 5 cm
= **7 cm**

26. 54 + 50 = 104

104 boys visited the zoo on the 2 days.

27. 54 + 50 = 104 (boys)
62 + 80 = 142 (girls)
142 – 104 = 38

38 more girls than boys visited zoo on the 2 days.

28. $3\frac{1}{12} + \frac{5}{6}$
$= 3\frac{1}{12} + \frac{10}{12}$
$= 3\frac{11}{12}$

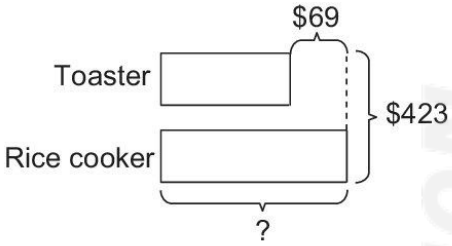
$\frac{5}{6}$ less than $\mathbf{3\frac{11}{12}}$ is $3\frac{1}{12}$.

29. By measurement, $\angle x$ = **115°**.

30. Area of each square
= 5 × 5
= 25 cm^2

Area of figure
= 9 × 25
= **225 cm^2**

31.

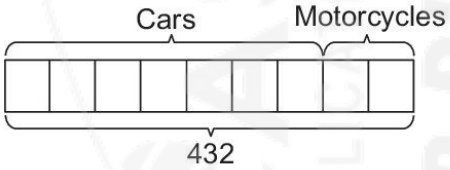


2 units = $423 + $69
= $492
1 unit = $492 ÷ 2
= $246

1 rice cooker costs $246.
3 × $246 = $738

The total cost of 3 such rice cookers is **$738**.

32.



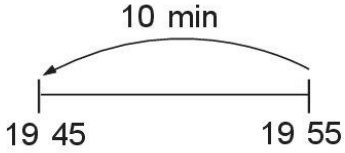
9 units = 432 vehicles
1 unit = 432 ÷ 9
= 48 vehicles

7 units – 2 units = 5 units

5 units = 5 × 48
= 240 vehicles

There are **240** more cars than motorcycles.

33.



The actual time Danny had his dinner was at **19 45**.

34. 7×0.75 km = 5.25 km

He jogs **5.25 km** in a week.

35. Perimeter of square = 88 cm

Length of square
= 88 cm ÷ 4
= 22 cm

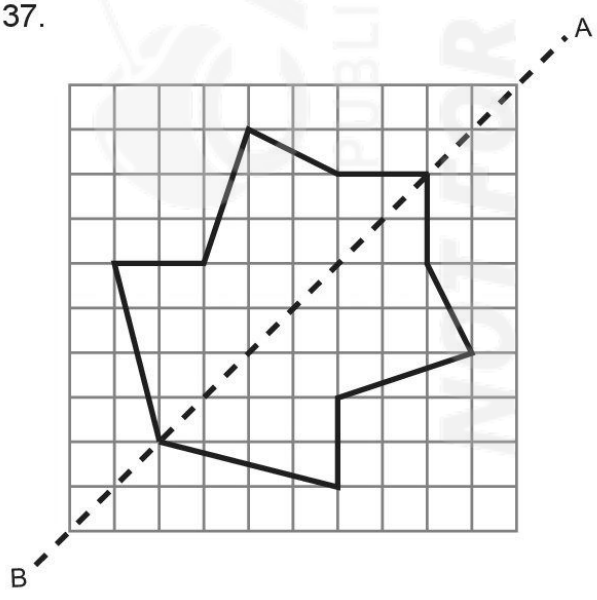
Area of square
= 22 × 22
= **484 cm²**

36. Multiples of 9 between 30 and 60
= 36, (45), 54

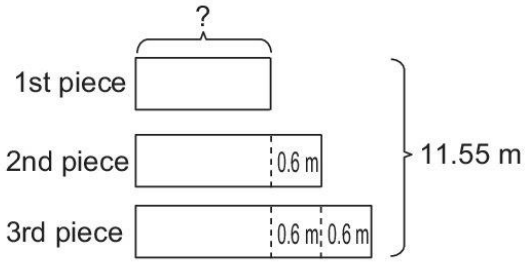
Factors of 45 = 1, 3, 5, 9, (15), 45

I am the number **45**.

37.



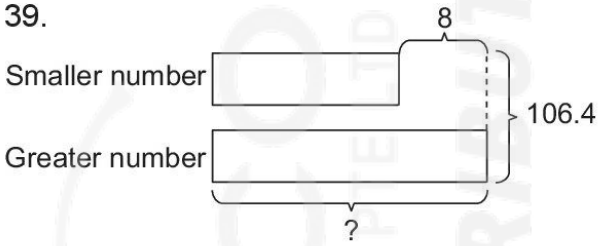
38.



3 units = 11.55 m – 0.6 m – 0.6 m – 0.6 m
= 9.75 m
1 unit = 9.75 m ÷ 3
= 3.25 m

The length of the shortest string was **3.25 m**.

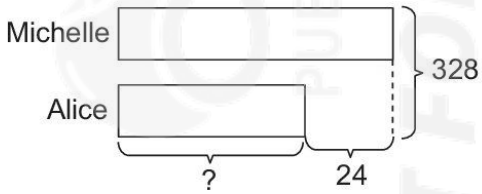
39.



2 units = 106.4 + 8
= 114.4
1 unit = 114.4 ÷ 2
= 57.2

The greater number is **57.2**.

40. $3 \times 8 = 24$



2 units = 328 – 24
= 304 cookies
1 unit = 304 ÷ 2
= 152 cookies

Alice baked 152 cookies.

152 ÷ 8 = 19

Alice baked **19** boxes of cookies.

Section C

41. $24 \times 56 = 1344$
$1344 - 180 = 1164$

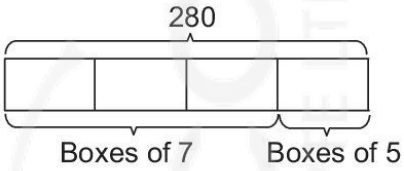
1164 stamps are not local stamps.

42. $44 \text{ m} - 2 \text{ m} - 2 \text{ m} = 40 \text{ m}$
Breadth $= 40 \text{ m} \div 4 = 10 \text{ m}$
Length $= 10 \text{ m} + 2 \text{ m} = 12 \text{ m}$

Area $= 12 \times 10$
$= 120 \text{ m}^2$

The area of the plot of land is **120 m²**.

43.



4 units = 280 muffins
1 unit = 280 ÷ 4
= 70 muffins
3 units = 3 × 70
= 210 muffins

70 ÷ 5 = 14 (Boxes of 5)
210 ÷ 7 = 30 (Boxes of 7)

14 + 30 = 44

She packed **44** boxes of muffins in all.

44. 2 S = 3 P
4 S = 6 P
4 S + 3 P ⟶ \$585
6 P + 3 P ⟶ \$585
9 P ⟶ \$585
1 P ⟶ \$585 ÷ 9 = \$65
5 P ⟶ 5 × \$65 = \$325

The cost of 5 such pairs of track pants is **\$325**.

45. \$720 ÷ 2 = \$360

	Mitchell	Aaron
In the end:	\$360	\$360
	↓ – \$120	↓ + \$120
	\$240	\$480
	↓ + \$40	↓ – \$40
At first:	\$280	\$440

$\frac{3}{4} \rightarrow$ \$360
$\frac{1}{4} \rightarrow$ \$360 ÷ 3 = \$120

$\frac{6}{7} \rightarrow$ \$240
$\frac{1}{7} \rightarrow$ \$240 ÷ 6 = \$40

Mitchell had **\$280** at first.