



Essential Problem Solving Skills

Answer Booklet

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P3 Solutions

Note: In all solution, u represents units and p represents parts.

Chapter 1 Whole Numbers

Answers to Unit 1.1 – More than

Let's Get Started 1.1

2.

A	1u	300
B	1u	

3.

A	1u	
B	1u	890

Ask Yourself

- Samantha has more money than Rhona. Hence, when drawing the model, the bar representing Samantha has to be longer than the bar representing Rhona. Check the models are labelled correctly, making parts equal.

Think Further

- Yes, it would be the same.

Let's Practise 1.1

Question 1

J	2348	450
L	2348	

$$\begin{aligned} \text{James' stickers} &= 2348 + 450 \\ &= 2798 \end{aligned}$$

James has **2798 stickers**.

Question 2

J	?	386
A	?	

$$\begin{aligned} \text{April} &= 1425 - 386 \\ &= 1039 \end{aligned}$$

Mr Lim sold **1039 files** in April.

Question 3

R1	2345	
R2	2345	977

$$\begin{aligned} \text{Total} &= 2345 + 2345 + 977 \\ &= 5667 \end{aligned}$$

Ali's total score was **5667 points**.

Question 4

CF	2448	
CC	2448	863

$$\begin{aligned} \text{Total} &= 2448 + 2448 + 863 \\ &= 5759 \end{aligned}$$

Angie baked **5759 cookies** in total.

Answers to Unit 1.2 – Less Than/Fewer Than

Let's Get Started 1.2

2.

S	1u	
L	1u	87

3.

A	1u	
C	1u	240

4.

D	1u	
R	1u	78

Ask Yourself

- Beth has more seashells than Sandy. Sandy has fewer seashells than Beth.

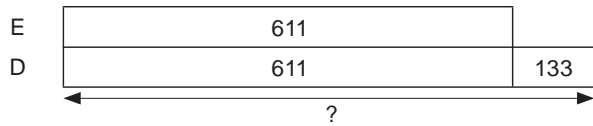
Think Further

- $$\begin{aligned} \text{Difference} &= 108 - 20 \\ &= 88 \\ \text{Total seashells} &= 98 + 10 \\ &= 108 \end{aligned}$$

The two girls have a total of **108 seashells**.

Let's Practise 1.2

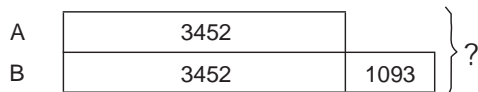
Question 1



Derrick's stickers = $611 + 133$
= 744

Derrick has **744 stickers**.

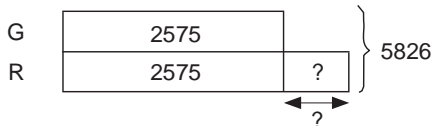
Question 2



Total = $3452 + 3452 + 1093$
= 7997

Both machine produce **7997 toys** in a day.

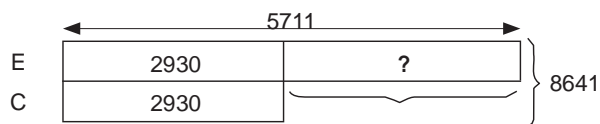
Question 3



Red = $5826 - 2575 = 3251$

There were **3251 red apples**.

Question 4



(a) Chinese books = $8641 - 5711$
= 2930

There were **2930 Chinese books** in the library.

(b) Difference → $5711 - 2930 = 2781$

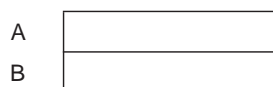
There were **2781 fewer** Chinese than English books in the library.

Answers to Unit 1.3 – Equal Stage (Beginning)

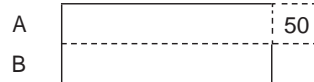
Let's Get Started 1.3

2.

At first



End



3.

At first



End



4.

At first



End



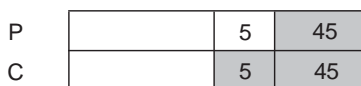
Ask Yourself

- The keyword is 'equal'.
- No as the relationship between the number of students at the playground and the school canteen was not provided at the beginning of the problem sum.

Think Further

1.

After

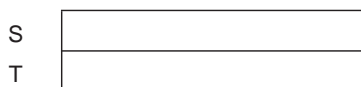


As more students left the canteen than the playground, there are 5 more students in the playground in the end.

Let's Practise 1.3

Question 1

At first



End



Difference = $288 + 56$
= 344

344 more twin beds than single beds remained in Mr Johan's shop in the end.

Question 2

At first

J	
M	

End

J	1u	12	28
M	1u	12	28

← 60 →
← 40 →

$$1u = 60 - 12 = 48$$

Maggie had **48 picture cards** in the end.

Question 3

At first

W	
M	

End

W	175		
M	175	438	566

← ? →

$$175 + 438 + 566 = 1179$$

There were **1179 men** in the museum in the end.

Question 4

At first

T	
S	

End

T		182	163
S	?	182	163

← 500 →
← 345 →

(a) $345 - 163 = 182$
There were **182 more shirts** sold than trousers.

(b) $500 - 182 = 318$
There were **318 shirts** left after the sale.

Answers to Unit 1.4 – Equal Stage (End)

Let's Get Started 1.4

2

End

A	
B	

At first

A	1u	15	5
B	1u	15	5

← 20 →

3.

End

P	
K	

At first

P		15	12
K		15	

Think Further

End

B	
T	

At first

B		16	8
T		16	

← 24 →

Coach Tim would only have **8 more** bean bags than tennis balls at first.

Let's Practise 1.4

Question 1

End

P	
S	

At first

P		40	30
S		40	

← ? →

$$40 + 30 = 70$$

Pamela's sister had **70 fewer** stickers than Pamela at first.



Question 2

End

J	
T	

At first

J	15	5
T	15	

← ? →

$15 + 5 = 20$

Jake had **20 more storybooks** than Toby at first.

Question 3

End

A	
B	

At first

← 3200 →			
A	1u	620	1455
B	1u	620	

}

(a) $620 + 1455 = 2075$
Shop A had **2015 more** tins of paint at first.

(b) $3200 - 2075 = 1125$
Shop B had **1125 tins of paint** at first.

Question 4

End

F	
G	

At first

← 70 →			
F	1u	12	12
G	1u	12	

$70 - 12 - 12 = 46$

Gopal had **46 plastic bottles** at first.

Answers to Unit 1.5 – Internal Transfer

Let's Get Started 1.5

2.

At first

B	105
A	

End

B	30	105	30
A			

← 30 →

3.

At first

C	36
M	

End

C			
M	6	36	6

← 42 →

Ask Yourself

1. The total number of sweets between Nadia and Ernie remained unchanged.

Think Further

1. Only the 'End' model would differ as follows:

End

← ? →		
E	60	20
N	60	

$60 + 20 = 80$

Ernie would have **80 more** sweets than Nadia.

Let's Practise 1.5

Question 1

At first

J	8
B	

End

← 6 →			
J	2	4	2
B	2	4	

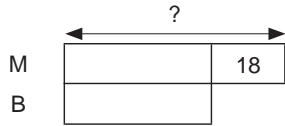
← ? →

$$6 - 2 = 4$$

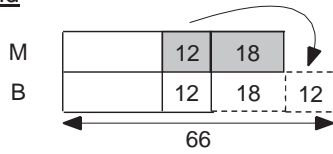
James' brother has **4 more** biscuits.

Question 2

At first



End

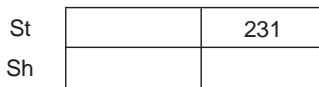


$$66 - 12 = 54$$

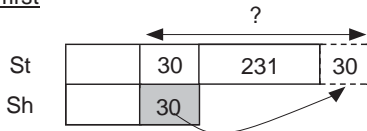
Mei Mei had **54 seashells** at first.

Question 3

End



At first

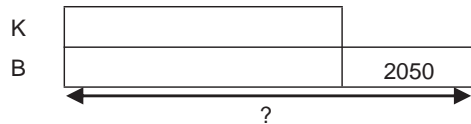


$$30 + 30 + 231 = 291$$

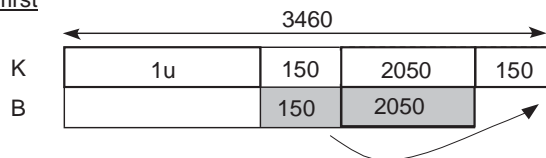
There were **291 fewer** sacks of rice on the shelf than in the store at first.

Question 4

End



At first



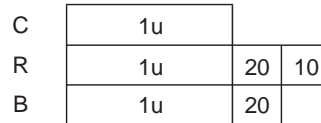
(a) $150 + 2050 + 150 = 2350$
There were **2350 more** sandwiches in the kitchen than on the buffet table at first.

(b) $1u = 3460 - 2350$
 $= 1110$
 $1110 + 150 + 2050 = 3310$
There were **3310 sandwiches** on the buffet table in the end.

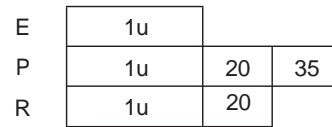
Answers to Unit 1.6 – Repeated Items

Let's Get Started 1.6

2.



3.

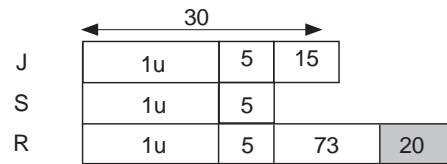


Ask Yourself

1. Sarah.

Think Further

1.



$$1u = 30 - 20$$

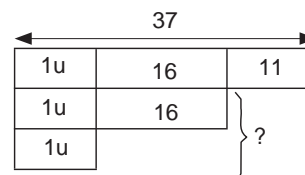
$$= 10$$

$$10 + 5 + 93 = 108$$

Russell had **108 muffins** at first.

Let's Practise 1.6

Question 1



$$1u = 37 - 16 - 11$$

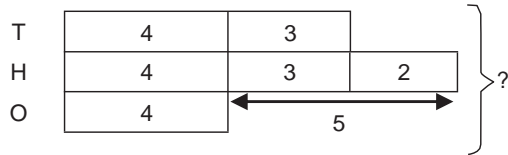
$$= 10$$

$$10 + 16 + 10 = 36$$

Susan and Kate have **36 erasers** altogether.

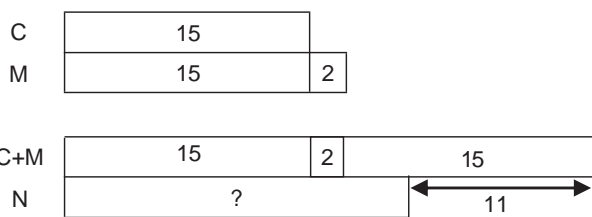


Question 2



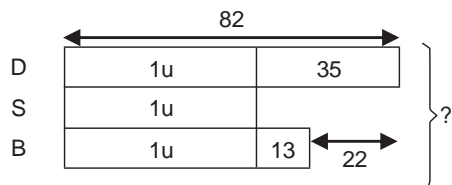
Tens = $4 + 3$
 $= 7$
 Hundreds = $4 + 5$
 $= 9$
 I am number **974**.

Question 3



$15 + 2 + 15 = 32$
 The total age of Chloe and Megan is 32 years.
 $32 - 11 = 21$
 Natalie is **21 years old**.

Question 4



(a) $1u = 82 - 35$
 $= 47$
 The skirt cost **\$47**.

(b) $82 + 47 + 47 + 13 = 189$
 The total cost of the dress, blouse and skirt is **\$189**.

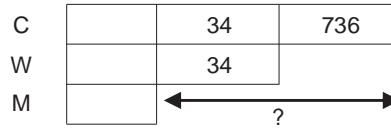
Answers to Review Questions on Chapter 1

Question 1

(a) $74 + 7 = 81$
 $81 - 39 = 42$
 There are **42 mini cookies** in Box B in the end.

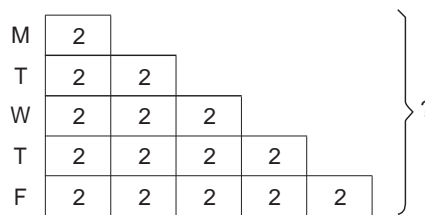
(b) $45 - 42 = 3$
 Box B can hold **3 more** mini cookies.

Question 2



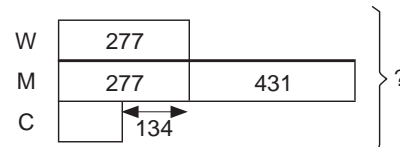
$34 + 736 = 770$
 There were **770 more** children than men at the theme park.

Question 3



$2 + 4 + 6 + 8 + 10 = 30$
 He saved **\$30** by the end of the week.

Question 4



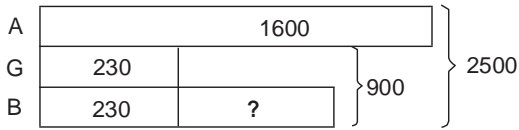
(a) $277 - 134 = 143$
 There were **143 children** at the basketball match.

(b) $277 + 277 + 431 + 143 = 1128$
 There were **1128 people** at the basketball match.

Question 5

$7000 + 1528 = 8528$
 There were 8528 DVDs in the afternoon.
 $8528 - 6520 = 2008$
2008 DVDs were loaned out.

Question 6



- (a) $2500 - 1600 = 900$
900 children participated in the event.
- (b) $900 - 230 - 230 = 440$
440 more boys than girls participated in the event.

Answers to Unit 2.1 – More than / Less than

Let's Get Started 2.1

2.

$$5u - 1u = 4u$$

$$4u = 8$$

$$1u = 8 \div 4$$

$$= 2$$

3.

$$30 \times 3 = 90$$

$$3u = 540 - 90$$

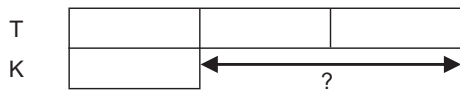
$$= 450$$

$$1u = 450 \div 3$$

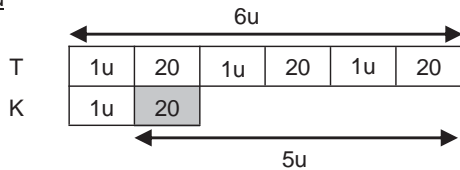
$$= 150$$

Think Further

At first



End



$$5u - 2u = 3u$$

$$3u = 60$$

$$1u = 60 \div 3$$

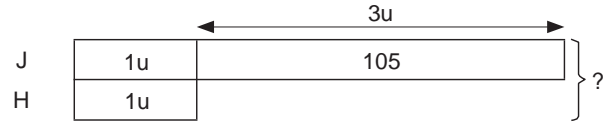
$$= 20$$

$$20 + 20 + 20 + 20 = 80$$

Tina had **80 more** books than Kelly at first.

Let's Practise 2.1

Question 1



$$3u = 105$$

$$1u = 105 \div 3$$

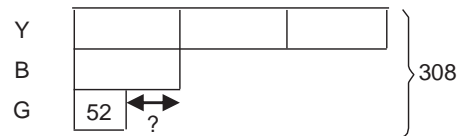
$$= 35$$

$$5u = 5 \times 35$$

$$= 175$$

They donated **\$175** altogether.

Question 2



$$4u = 308 - 52$$

$$= 256$$

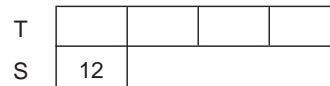
$$1u = 256 \div 4$$

$$= 64$$

There are **64 blue balls** in the box.

Question 3

Each Month



$$5 \times 12 = 60$$

They save \$60 each month.

$$60 \times 3 = 180$$

Susan and Tanya will save **\$180** in 3 months.

Question 4

Each Day



$$\$1 + \$1 + \$2 = \$4$$

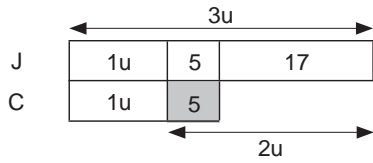
Maggie's pocket money for 1 day is \$4.

$$4 \times 11 = 44$$

Maggie's pocket money for 11 days is **\$44**.



Question 5



$$2u = 17 + 5$$

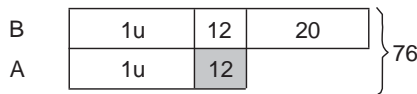
$$= 22$$

$$1u = 22 \div 2$$

$$= 11$$

Chloe had 11 pencils in the end.

Question 6



$$2u = 76 - 12 - 20$$

$$= 44$$

$$1u = 44 \div 2$$

$$= 22$$

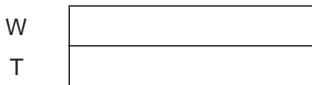
There were **22 fish** in Tank A in the end.

Answers to Unit 2.2 – Equal Stage

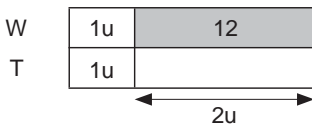
Let's Get Started 2.2

2.

At first

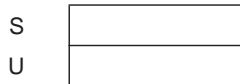


End



3.

End



At first



Ask Yourself

- It is necessary to divide the number of cookies by the number of tins because the values used in the model are the number of tins of cookies and not the number of cookies.
- Yes it is possible to solve the problem sum working

- Yes it is possible to solve the problem sum working backwards because there is a comparison at the end.

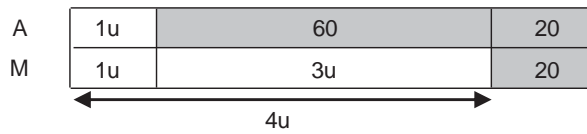
Let's Practise 2.2

Question 1

At first



End



$$3u = 60$$

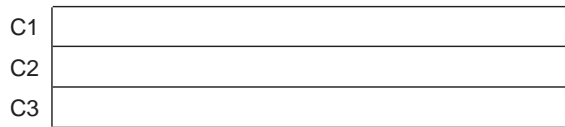
$$1u = 60 \div 3$$

$$= 20$$

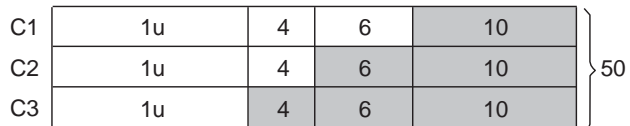
Alan had **20 pebbles** in the end.

Question 2

At first



End



$$3u = 50 - 14$$

$$= 36$$

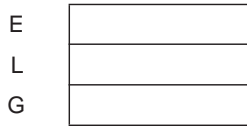
$$1u = 36 \div 3$$

$$= 12$$

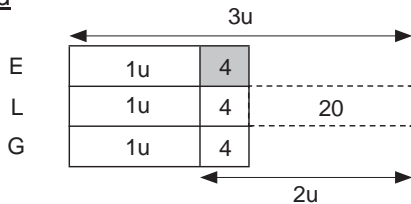
The last child had **12 caramel toffees** in the end.

Question 3

At first



End



(a) $2u = 24$

$1u = 24 \div 2$
 $= 12$

Emma had **12 stickers** in the end.

(b) $3u + 12 = 3 \times 12 + 12$
 $= 48$

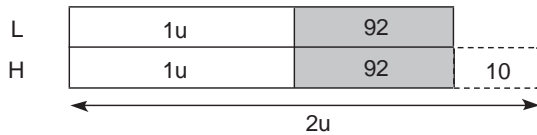
The three friends had **48 stickers** at first.

Question 4

At first



End



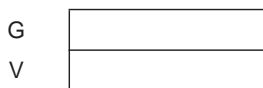
$1u = 92 + 10$
 $= 102$

$2u = 102 \times 2$
 $= 204$

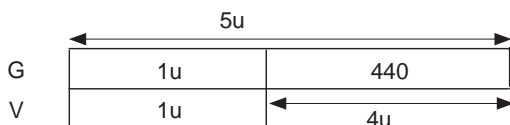
Lydia and Hannah had **102** and **204 safety pins** respectively in the end.

Question 5

End



At first



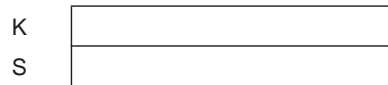
$4u = 440$

$1u = 440 \div 4$
 $= 110$

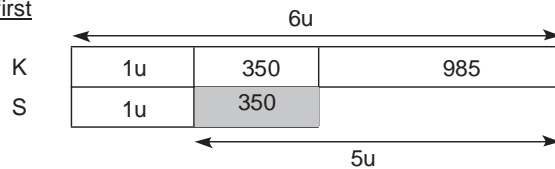
There were **110 guests** in the VIP section at first.

Question 6

End



At first



$5u = 350 + 985$
 $= 1335$

$1u = 1335 \div 5$
 $= 267$

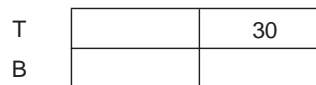
Mr Koh's son had **\$267** at first.

Answers to Unit 2.3 – Internal Transfer

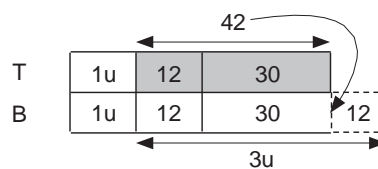
Let's Get Started 2.3

2.

At first

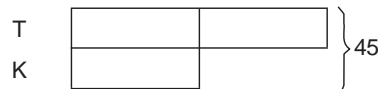


End

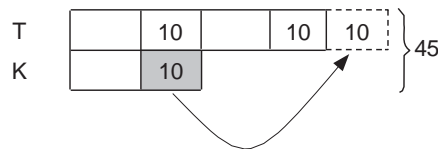


3.

End



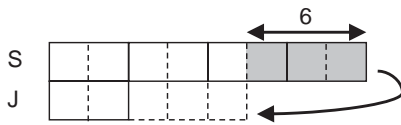
At first



Think Further

1.

End



$$3u = 6$$

$$1u = 6 \div 3$$

$$= 2$$

$$13u = 13 \times 2 = 26$$

They had **26 storybooks** altogether.

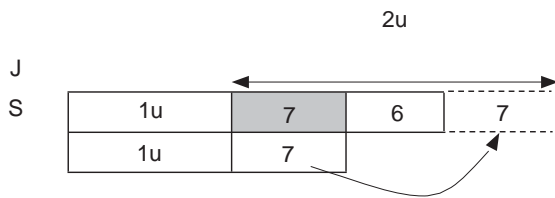
Let's Practise 2.3

Question 1

At first



End



$$2u = 7 + 6 + 7$$

$$= 20$$

$$1u = 20 \div 2$$

$$= 10$$

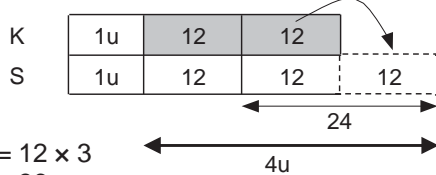
Sulin had **10 hair clips** in the end.

Question 2

At first



End



$$4u = 12 \times 3$$

$$= 36$$

$$1u = 36 \div 4$$

$$= 9$$

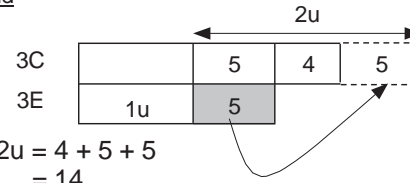
Kate had **9 stickers** in the end.

Question 3

At first



End



$$2u = 4 + 5 + 5$$

$$= 14$$

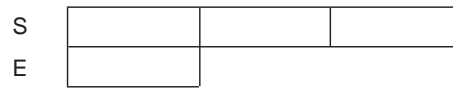
$$1u = 14 \div 2$$

$$= 7$$

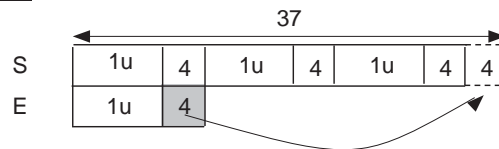
Primary 3E had **7 posters** at the end.

Question 4

End



At first



$$3u = 37 - 16$$

$$= 21$$

$$1u = 21 \div 3$$

$$= 7$$

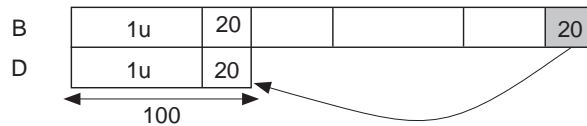
Ethan had **7 marbles** at first.

Question 5

End



At First



$$1u = 100 - 20$$

$$= 80$$

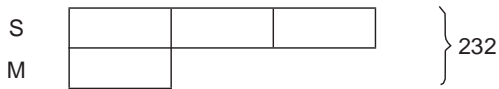
$$4u = 4 \times 80$$

$$= 320$$

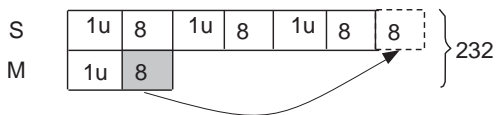
Devi's brother had **320 sweets** in the end.

Question 6

End



At first



$$232 \div 4 = 58$$

Mike had 58 stamps in the end.

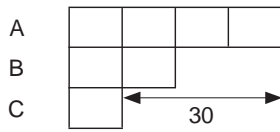
$$58 - 8 = 50$$

Mike had **50 stamps** at first.

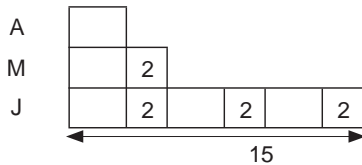
Answers to Unit 2.4 - Repeated Items

Let's Get Started 2.4

2.



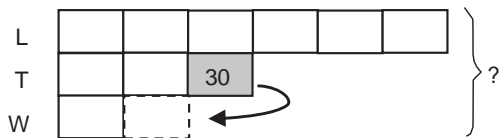
3.



Ask Yourself

- Mr Tan is repeated. Hence, by placing his bar in the middle makes the comparison between the other two men clearer.

Think Further



$$1u = 30$$

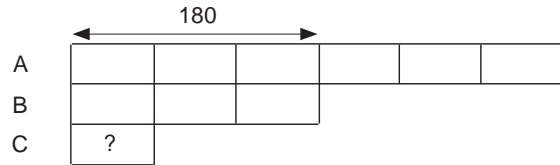
$$10 = 10 \times 30$$

$$= 300$$

They have **300 golf balls** altogether.

Let's Practise 2.4

Question 1



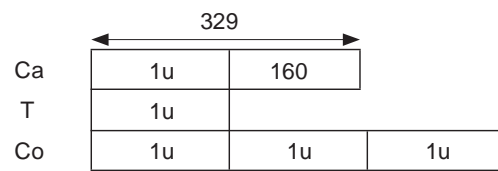
$$3u = 180$$

$$1u = 180 \div 3$$

$$= 60$$

Carl have **60 stickers**.

Question 2

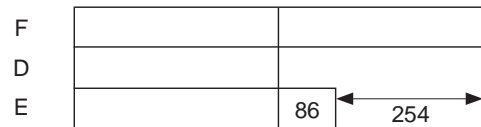


$$1u = 329 - 160$$

$$= 169$$

The cost of the tablet is **\$169**.

Question 3



$$1u = 86 + 254$$

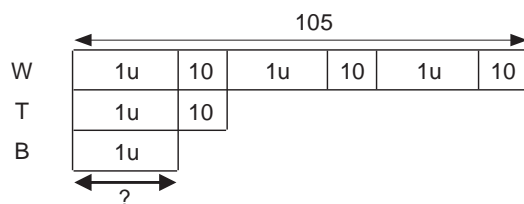
$$= 340$$

$$3u = 3 \times 340$$

$$= 1020$$

Frank and David have **1020 marbles** altogether.

Question 4



$$3u = 105 - 30$$

$$= 75$$

$$1u = 75 \div 3$$

$$= 25$$

The belt cost **\$25**.

Question 5

3rd	1u	10	1u	10	} 166
2nd	1u	10			
1st	1u				

$$4u = 166 - 30$$

$$= 136$$

$$1u = 136 \div 4 = 34$$

There were **34 strawberries** in the first basket.

Question 6

S	1u	1u	1u	} 187
J	1u			
D	1u	12		

$$5u = 187 - 12$$

$$= 175$$

$$1u = 175 \div 5$$

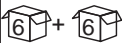
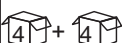
$$= 35$$

Jill collected **35 seashells**.

Answers to Unit 2.5 – Gap & Difference

Let's Get Started 2.5

2.



Case 1		Total = <u>12</u> Toy cars	Result <u>16 - 12 = 4</u> Left/Short
Case 2		= <u>8</u> Toy cars	<u>16 - 8 = 8</u> Left/Short

(a) Compare Case 1 and Case 2 : There are 2 more **(Difference)** toy cars in each box.

(b) This results in a **gap** of : 12 - 8 = 4 toy cars.

(c) Subtract the two **Results** (the last column) 8 - 4 = 4. It is the *same as/different than* the Gap.

3.

Case 1		Total = <u>16</u> Cookies	Result <u>16 - 12 = 4</u> Left/Short
Case 2		= <u>28</u> Cookies	<u>28 - 12 = 16</u> Left/Short

(a) Compare Case 1 and Case 2 : There are 3 more **(Difference)** cookies in each tin.

(b) This results in a Gap of : 28 - 16 = 12 cookies.

(c) Subtract the two **Results** (the last column) 16 - 4 = 12. It is the *same as / different than* the Gap.

Ask Yourself

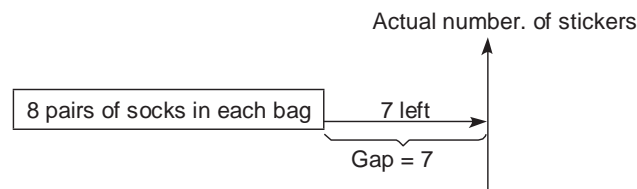
1. This sum has the keywords 'If and left'. This tells us that we can apply the Gap & Difference concept.

Think Further

In the previous question and in Let's Get Started, cases either resulted in a 'Left-Left' or 'Short-Short' scenario. When this occurs we subtracted the two results to arrive at the Gap. When there is a 'Left-Short' or 'Short-Left' scenario, we add the two results together to arrive at the Gap.

Let's Practise 2.5

Question 1



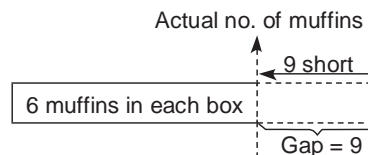
$$8 \times 2 = 16$$

Keith puts 16 pairs of socks into the bags.

$$16 + 7 = 23$$

Keith has **23 pairs of socks**.

Question 2



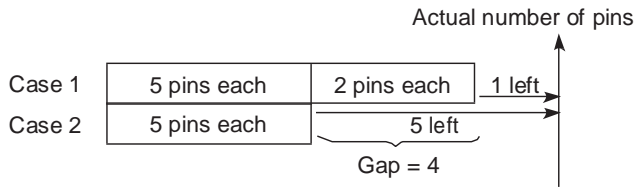
$$6 \times 10 = 60$$

Belinda placed 60 muffins into 10 boxes.

$$60 - 9 = 51$$

Belinda baked **51 muffins**.

Question 3



Difference between Case 1 and Case 2 = 2 pins for each friend

$$\text{Results in a Gap} = 5 - 1 = 4$$

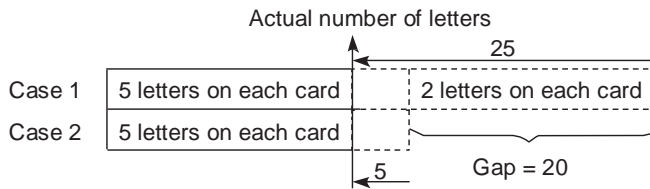
$$\text{Number of friends} = 4 \div 2 = 2$$

$$\text{Case 1: Number of pins} = 2 \times 7 + 1 = 15$$

$$\text{Check with Case 2: Number of pins} = 2 \times 5 + 5 = 15 \text{ (checked)}$$

Reese had **15 pins** at first.

Question 4



Difference between Case 1 and Case 2 = 2 letters in each card

$$\text{Results in a Gap} = 25 - 5 = 20$$

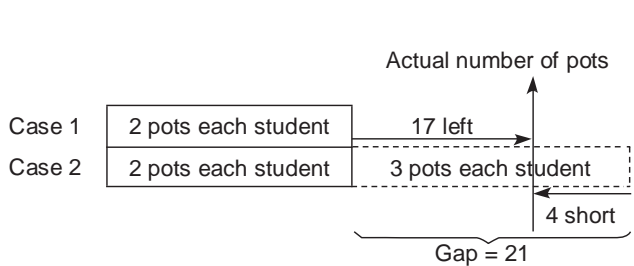
$$\text{Number of cards} = 20 \div 2 = 10$$

$$\text{Case 1: Number of letters} = 10 \times 7 - 25 = 45$$

$$\text{Check with Case 2: Number of letters} = 10 \times 5 - 5 = 45 \text{ (Checked)}$$

Julia had **45 letters**.

Question 5



Difference between Case 1 and Case 2 = 3 pots for each student

$$\text{Results in a Gap} = 17 + 4 = 21$$

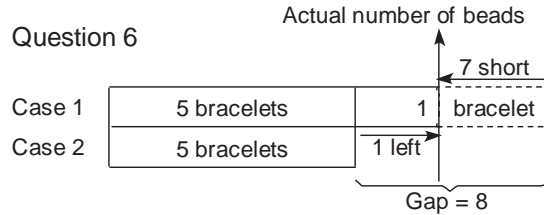
$$\text{Number of students} = 21 \div 3 = 7$$

$$\text{Case 1: Number of pots} = 7 \times 2 + 17 = 31$$

$$\text{Check with Case 2: Number of pots} = 7 \times 5 - 4 = 31 \text{ (Checked)}$$

Mrs Lee bakes **31 pots**.

Question 6



Difference between Case 1 and Case 2 = 1 bracelet

$$\text{Results in a Gap} = 7 + 1 = 8$$

1 bracelet = 8 beads

$$\text{Case 1: Number of beads} = 6 \times 8 - 7 = 41$$

$$\text{Check with Case 2: Number of beads} = 5 \times 8 + 1 = 41 \text{ (checked)}$$

Leann had **41 beads**.

Answers to Unit 2.6 – Quantity × Value

Let's Get Started 2.6

2.

Items	Quantity	Value(\$)
Pens	5	2
Books	7	9

3.

Items	Quantity	Value(balloons)
Boys	4u	3
Girls	1u	5

4.

M	1u	1u	1u
C	1u		
B	1u	1u	

Items	Quantity	Value(wheels)
Motorcycle	3u	2
Cars	1u	4
Buses	2u	6

Ask Yourself

1.

Items	Quantity	Value(tokens)
Boys	2u	2
Girls	1u	6

2. The 50 tokens represent the total number of tokens given to the boys and girls.

Think Further

1. The modified problem sums can be solved using the Guess & Check method as the following information has been provided:
- the total number of children,
 - the total value of the tokens; and
 - the value of tokens awarded to each child.
2. Instead of providing a relationship comparing the number of boys to the number of girls, a second total (i.e. total number of children) was provided.

Number of boys	Number of tokens boys received	Number of girls	Number of tokens girls received	Total number of tokens	Check
21	$21 \times 3 = 63$	0	$0 \times 6 = 0$	$63 + 0 = 63$	x
20	$20 \times 3 = 60$	1	$1 \times 6 = 6$	$60 + 6 = 66$	x
14	$14 \times 3 = 42$	7	$7 \times 6 = 42$	84	√

Target difference = $84 - 63$
= 21

Gap = $66 - 63$
= 3

Number of girls = $21 \div 3$
= 7

Difference = $14 - 7$
= 7

There were **7 more boys** than girls.

Let's Practise 2.6

Question 1

C	1u	1u	1u
G	1u		

Items	Quantity	x	Value (legs)	Total value (legs)
C	3u	x	2	6u
G	1u	x	4	4u
Total	4u			10u

$10u = 100$

$1u = 100 \div 10$
= 10

There were **10 goats**.

Question 2

A	1u	1u	1u	1u	1u
S	1u				

Items	Quantity	x	Value (buttons)	Total value (buttons)
A	5u	x	1	5u
S	1u	x	5	5u
Total	6u			10u

$10u = 20$

$1u = 20 \div 10$
= 2

There were **2 shirts**.

Question 3

R	1u	1u
Y	1u	

Items	Quantity	x	Value (stripes)	Total value (stripes)
R	2u	x	3	6u
Y	1u	x	2	2u
Total	3u			8u

$6u - 2u = 4u$

There were 4u more stripes on the red candles than on the yellow candles.

$4u = 16$
 $1u = 16 \div 4$
= 4

There were **4 yellow candles**.

Question 4

V	1u	1u	1u	1u
P	1u			

Items	Quantity	x	Value (roses)	Total value (roses)
V	4u	x	3	12u
P	1u	x	6	6u
Total	5u			18u

$6u = 24$

$1u = 24 \div 6 = 4$

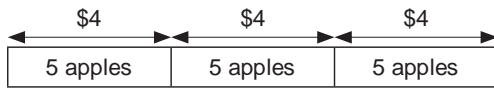
$18u = 18 \times 4$
= 72

There were **72 red roses** altogether in the vases and pots.



Answers to Review Questions Chapter 2

Question 1

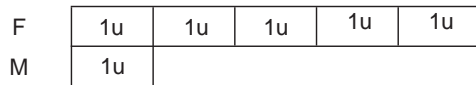


$3 \times \$4 = \12
 15 apples cost \$12.
 $\$3 \times 5 = 15$
 5 papayas cost \$15.

15 Apples	\$12	
5 Papayas	\$12	\$3

- (a) Mrs Shakira spent more money on **papayas**.
 $\$15 - \$12 = \$3$
 (b) She spent **\$3 more** on papayas.

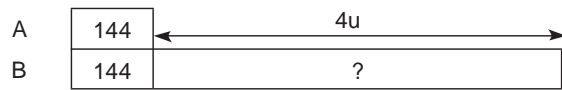
Question 2



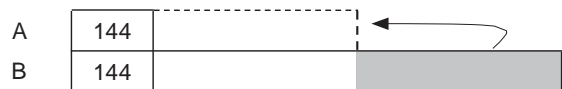
$1u = 7$
 $5u = 5 \times 7 = 35$
 Mei Lin's father is 35 years old now.
 $35 + 10 = 45$
 Mei Lin's father would be **45 years old** in 10 years' time.

Question 3

Before



After



$4u = 4 \times 144 = 576$
 There was \$576 more in Box B than Box A.
 $576 \div 2 = 288$
\$288 must be moved from Box B to Box A.

Question 4

At first

Buttons	
Beads	

End

Buttons	1u	36
Beads	1u	36

$\longleftarrow 2u \longrightarrow$

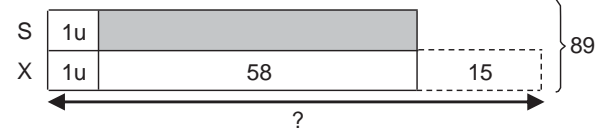
$2u = 36$
 $1u = 36 \div 2 = 18$
 $6u = 6 \times 18 = 108$
 Sally had **108 beads and buttons** in total.

Question 5

At first

S	
X	

End



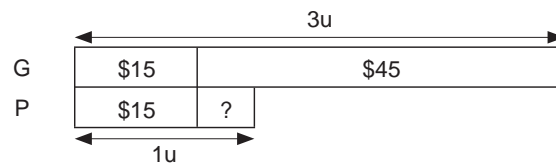
$2u = 89 - 58 - 15 = 16$
 $1u = 16 \div 2 = 8$
 $8 + 73 = 81$
 Xin Ying had **81 stamps** in the end.

Question 6

1st Week Savings

G	\$15
P	\$15

2nd Week Savings



$$3u = 45 + 15$$

$$= 60$$

$$1u = 60 \div 3$$

$$= 20$$

$$20 - 15 = 5$$

Peng Tze saved **\$5** in the 2nd week.

Answers to Unit 3.1 – Linear Formation

Let's Get Started 3.1

- There were 4 gaps.
- He made 3 cuts.
- She would need 4 10-cent coins to create the corners.

Ask Yourself

- There are 4 gaps.
- There are more trees than gaps as there are trees planted on each side of a gap much like books between two book ends or a football goal is between two goal posts.

Think Further

- No. When trees are planted around a rectangular shape, two sides of that shape share a common corner. Therefore only 1 tree is planted on that corner.

Let's Practise 3.1

Question 1

$$11 - 1 = 10$$

There are 10 gaps between 11 poles.

$$10 \times 75 \text{ m} = 750 \text{ m}$$

The total distance between the first and the last pole is **750 m**.

Question 2

$$4 - 1 = 3$$

There are 3 gaps between the 1st and 4th flower pot.

$$15 \text{ m} \div 3 = 5 \text{ m}$$

The distance between each flower pot is **5 m**.

Question 3

$$4 + 1 = 5$$

There are 5 ribbons after 4 cuts.

$$20 \div 5 = 4$$

Each small piece is **4 m** long.

Question 4

84 marbles – 4 marbles (at the corners) = 80 marbles

$$80 \div 4 = 20$$

$$20 + 2 \text{ (2 corners)} = 22$$

There are **22 marbles** on one side of the square.

Question 5

105 steps – 3 steps (at the corners) = 102 steps

$$102 \div 3 = 34$$

$$34 + 2 \text{ (steps at the corner)} = 36 \text{ steps}$$

She left **36 foot prints** on each side of the triangle.

Question 6

There are 10 gaps between the 1st and the 11th light.

$$100 \text{ m} \div 10 = 10 \text{ m}$$

The distance between each light is **10m**.

Answers to Unit 3.2 – Regular Gaps

Let's Get Started 3.2

- Change: increase by 3
- Change: Increase by 2 dots

Ask Yourself

- Yes, the number of shapes increased by 3 in each subsequent figure.
- For each figure number, there is one row of 3 shapes. Eg. Figure 1 has 1 row, Figure 2 has 2 rows, Figure 3 has 3 rows, etc.
The number of shapes \rightarrow Figure no. \times 3

Think Further

- The approach to determining the patterns of the figures will not change as the number of shapes still increased by 3 in each subsequent figure.

Let's Practise 3.2

Question 1

Figure number	Number of Buttons	Number of button holes
1	1	2
2	2	4
3	3	6
	Figure number \times 1	Figure number \times 2

(a) $5 \times 2 = 10$

There are **10 button holes** in Figure 5.

(b) $17 \times 2 = 34$

There are **34 button holes**.

(c) $22 \div 2 = 11$ buttons

There are **11 buttons**.

Question 2

Figure number	Number of Tables	Number of chairs
1	1	4
2	2	6
3	3	8
	Figure number \times 1	Number of table \times 2

(a) $5 \times 2 + 2 = 12$

12 people can sit on 5 such tables.

(b) $10 \times 2 + 2 = 22$

There are **22 chairs** in Figure 10.

(c) $120 - 2 = 118$

$118 \div 2 = 59$

59 tables can sit 120 people.

(Check: $59 \times 2 + 2 = 120$)

Question 3

Figure number	Number of shapes
1	4
2	7
3	10
Figure number	Figure number \times 3 + 1

(a) $5 \times 3 + 1 = 16$

There are **16 shapes** in figure 5.

(b) $10 \times 3 + 1 = 31$

$31 - 16 = 15$

There are **15 more shapes** in Figure 10 than Figure 5.

(c) $28 - 1 = 27$

$27 \div 3 = 9$

There are 28 shapes in **Figure 9**.

Question 4

Figure number	Number of clouds
1	1
2	3
3	5
	Figure number \times 2 + 1

(a) No. of clouds in Figure 6 $\rightarrow 6 \times 2 - 1 = 11$
11 clouds

(b) No. of clouds in Figure 21 $\rightarrow 21 \times 2 - 1 = 41$
41 clouds

(c) When there are 35 clouds,

$35 + 1 = 36$

$36 \div 2 = 18$

Figure 18 has 35 clouds.

Question 5

Figure number	Number of Sticks	Number of dots
1	2	5
2	4	8
3	6	11
	Figure number \times 2	Number of table \times 3 + 2

(a) $6 \times 2 = 12$

There are **12 sticks** in Figure 6.

(b) $20 \times 3 + 2 = 62$

62 dots are needed to form Figure 20.

(c) $30 \times 3 + 2 = 92$

There are **92 dots** in Figure 30.

$30 \times 2 = 60$

There are **60 sticks** in Figure 30.

$92 - 60 = 32$

There are **32 more** dots than sticks in Figure 30.

(d) $80 \div 2 = 40$

There are 80 sticks in **Figure 40**.

(e) $122 - 2 = 120$

$120 \div 3 = 40$

There are 122 dots in **Figure 40**.

Answers to Review Questions Chapter 3

Question 1

$$6 - 1 = 5$$

There are 5 gaps between the 1st and the 6th toy soldier.

$$20 \text{ cm} \div 5 = 4 \text{ cm}$$

The length of each gap is 4 cm.

$$120 \div 4 = 30$$

There are 30 gaps between the 1st and the last toy soldier.

$$30 + 1 = 31$$

There are 31 toy soldiers.

Question 2

Figure number	Number of Shapes	Number of arrow-heads
1	1	4
2	2	8
3	3	12
	Figure number $\times 1$	Number of shapes $\times 4$

(a) $10 \times 4 = 40$

There are **40 arrowheads** in Figure 10.

(b) $108 \div 4 = 27$

There are 108 arrowheads in **Figure 27**.

Question 3

Figure number	Number of shapes
4	4
5	7
6	10
	Figure number $\times 3 + 8$

(a) $9 \times 3 - 8 = 19$

There are **19 stars** in Figure 9.

(b) $35 \times 3 - 8 = 97$

There are **97 stars** in Figure 35.

(c) $58 + 8 = 66$

$$66 \div 3 = 22$$

There are 58 stars in **Figure 22**.

Question 4

Figure number	Number of Circles	Number of Sticks
1	2	4
2	6	12
3	10	20
	Fig number $\times 4 - 2$	Number of circles $\times 2$ or Fig number $\times 8 - 4$

(a) $7 \times 4 - 2 = 26$

There are **26 circles** in Figure 7.

(b) $32 \times 4 - 2 = 126$

There are **126 circles** in Figure 32.

(c) $236 \div 2 = 118$

$$118 + 2 = 120$$

$$120 \div 4 = 30$$

There are 236 sticks in **Figure 30**.

Answers to Chapter 4 – Length

Let's Get Started 4

- 2 m 15 cm = **215** cm
- 4 m 98 cm = **498** cm
- 567 cm = **5 m 67** cm
- 3023 cm = **30 m 23** cm
- 3 km 680 m = **3680** m
- 4 km 34 m = **4034** m
- 5890 m = **5 km 890** m
- 298 m = **0 km 298** m

Ask Yourself

- No, as the units for both lengths are the same.
- Yes, 'longer than'. Similar to the More than/ Less than concept, you can solve this problem sum using the model-drawing approach.

Think Further

S	1u	12	}	60
R	1u			

$$2u = 60 - 12$$

$$= 48$$

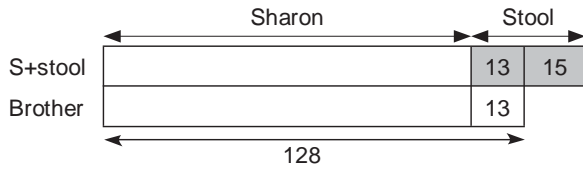
$$1u = 48 \div 2$$

$$= 24$$

The solution would differ from the solution above.

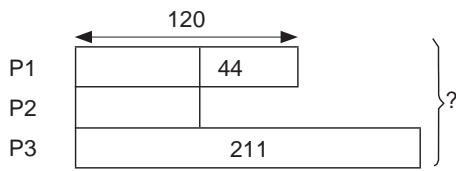
Let's Practise 4

Question 1



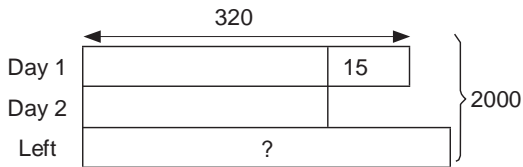
$28 - 15 = 13$
 $128 - 13 = 115$
 Sharon's height is **115 cm**.

Question 2



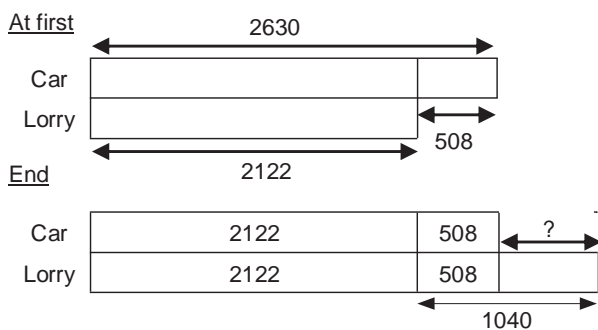
$120 \text{ cm} - 44 \text{ cm} = 76 \text{ cm}$
 The length of the second piece of ribbon is 76 cm.
 $211 \text{ cm} + 76 \text{ cm} + 120 \text{ cm} = 407 \text{ cm}$
 $407 \text{ cm} = 4 \text{ m } 7 \text{ cm}$
 The length of the string before it was cut was **4 m 7 cm**.

Question 3



$320 \text{ m} - 15 \text{ m} = 305 \text{ m}$
 305 m of the bridge was painted on the second day.
 $2000 \text{ m} - 305 \text{ m} - 320 \text{ m} = 1375 \text{ m}$
1 km 375 m of the bridge was not painted.

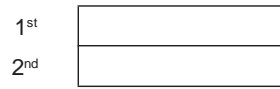
Question 4



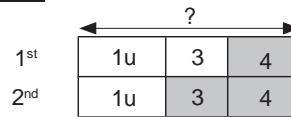
$2630 \text{ m} - 2122 \text{ m} = 508 \text{ m}$
 The car was 508 m ahead of the lorry at noon.
 $1040 \text{ m} - 508 \text{ m} = 532 \text{ m}$
 The car was **532 m** away from the town at noon.

Question 5

At first



End



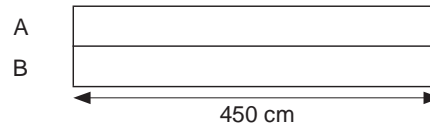
$91 \div 7 = 13$ blocks
 There were 13 blocks that remained.
 $2u = 13 - 3$
 $= 10$
 $1u = 10 \div 2$
 $= 5$
 There were 5 block on the second tower in the end.

Question 6

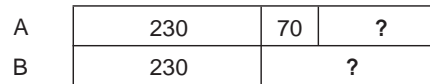
$31 \text{ cm} - 22 \text{ cm} = 9 \text{ cm}$
 The distance between Liam and Jiemin was 9 cm.
 $5 \times 9 \text{ cm} = 45 \text{ cm}$
 Liam hopped **45 cm further** than Jiemin.

Question 7

Total length of road = 900 cm
End (Equal length to be painted)

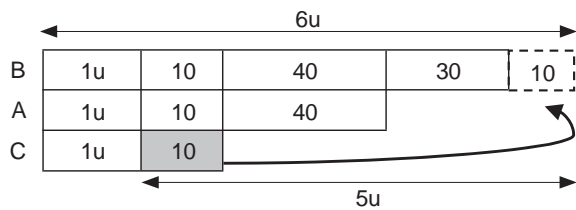


Atfirst



- (a) $450 \text{ cm} - 300 \text{ cm} = 150 \text{ cm}$
Painter A had 150 m of the road left to paint
- (b) $450 \text{ cm} - 230 \text{ cm} = 220 \text{ cm}$
Painter B had 220 m of the road left to paint.
 $220 \text{ cm} - 150 \text{ cm} = 70 \text{ cm}$
 Painter A had **70 cm less** left to paint.

Question 8



$$5u = 90$$

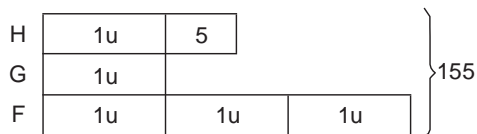
$$1u = 90 \div 5$$

$$= 18$$

$$18 + 10 + 40 = 68$$

The length of the Ribbon A is **68 cm** in the end.

Question 9



$$5u = 155 - 5$$

$$= 150$$

$$1u = 150 \div 5$$

$$= 30$$

Gill received **30 m** of the crepe paper.

Question 10

Item	Quantity	x	Value (\$)	Total value
Shop A	2u	x	3	6u
Shop B	1u	x	4	4u
Total	3u			10u

$$10u = 170$$

$$1u = 170 \div 10$$

$$= 17$$

Mrs Chua bought **17 m** of fabric from Shop B.

Answers to Chapter 5 – Mass

Let's Get Started 5

1.

- a) 2000 g b) 2780 g c) 4080 g d) 8009 g

2.

- a) 3 kg b) 8 kg 90 g c) 3 kg 7 g d) 6 kg 60 g

3.

- (a) 5 kg 600 g → 5600 g

$$2 \text{ kg } 300 \text{ g} \rightarrow 2300 \text{ g}$$

$$5600 + 2300 = 7900$$

$$7900 \rightarrow 7 \text{ kg } 900 \text{ g}$$

- (b) 9 kg 900 g = 9900 g

$$3 \text{ kg } 600 \text{ g} = 3600 \text{ g}$$

$$9900 - 3600 = 6300$$

$$6300 \text{ g} \rightarrow 6 \text{ kg } 300 \text{ g}$$

- (c) 7 kg 450 g → 7450 g

$$5 \text{ kg } 890 \text{ g} \rightarrow 5890 \text{ g}$$

$$7450 - 5890 = 1560$$

$$1560 \text{ g} \rightarrow 1 \text{ kg } 560 \text{ g}$$

4.

- (a) 3 kg 750 g

- (b) 5 kg

- (c) 1 kg 125 g

- (d) 6 kg

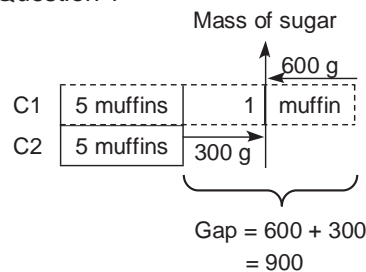
- (e) 1 kg 200 g

Ask Yourself

1. The key words are 'If-If.' Problem sums involving 'If-If' may be solved using the Gap and Difference concept presented in Chapter 2.5.

Let's Practise 5

Question 1

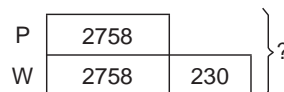


$$\text{Case 1 : } 5 \times 900 + 300 \text{ g} = 4500$$

Bao Ming has **4800 g** of sugar.

$$\text{Check using Case 2 : } 6 \times 900 \text{ g} - 600 \text{ g} = 4800 \text{ g}$$

Question 2



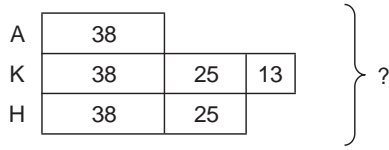
$$2758 \text{ g} + 230 \text{ g} = 2988 \text{ g}$$

The mass of the watermelon is 2988 g.

$$2988 \text{ g} + 2758 \text{ g} = 5746 \text{ g}$$

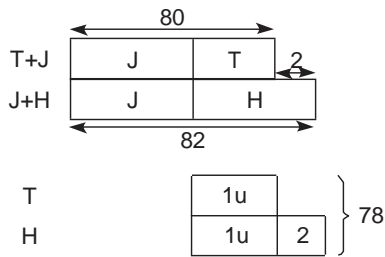
The total mass of the fruits is **5746 g**.

Question 3



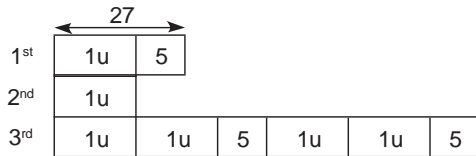
- (a) $38 - 13 = 25$
 $38 + 25 = 63$
 Harry's mass is **63 kg**.
- (b) $38 + 38 = 76$
 Kievan's mass is 76 kg.
 $38 + 76 + 63 = 177$
 The total mass of the three people is **177 kg**.

Question 4



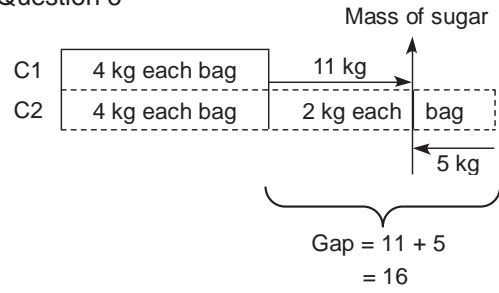
- $2u = 78 - 2$
 $= 76$
 $1u = 76 \div 2$
 $= 38$
- Tina has 38 kg of feathers.
 $80 - 38 = 42$
 $38 + 2 = 40$
 Jessica and Hilda have **42 kg** and **40 kg** of feathers respectively

Question 5



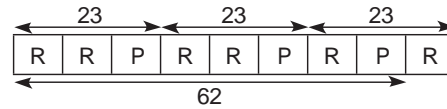
- $1u = 27 - 5$
 $= 22$
- $6 \times 22 + 15 = 147$
 The total mass of the three baskets of fruits is **147 kg**.

Question 6



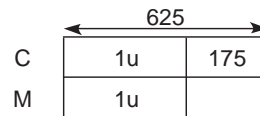
- Case 1 : $8 \times 4 + 11 = 43$
 Farmer Han had **43 kg** of sugar.
 Case 2: $8 \times 6 - 5 = 43$ (checked)

Question 7



- $3 \times 23 - 62 = 7$
 The mass of each bag of rice is 7 kg.
 $2 \times 7 - 14 = 9$
 The mass of the bag of potatoes is **9 kg**.

Question 8



- $1u = 625 - 175$
 $= 450$
- $5 \times 450 = 2250$
 The mass of 5 cartons of milk is 2250 g.
 $2250 + 625 = 2875$
 The total mass of the items was **2875 g**.

Question 9

Items	Quantity	x	Value (g)	Total value (g)
A	1u	x	6	6u
P	1u	x	4	4u
Total	2u			10u

- $10u = 1710$
 $1u = 1710 \div 10$
 $= 171$
 $171 \times 2 = 342$
 Sarah bought a total of **342 bags** of fruits.

Question 10

Items	Quantity	x	Value (g)	Total Value (g)
A	2u	x	25	50u
B	1u	x	23	23u
C	3u	x	9	27u
Total	6u			100u

$$4u = 44$$

$$1u = 44 \div 4$$

$$= 11$$

$$6 \times 11 = 66$$

Jacqueline bought **66 tarts** altogether.

Answers to Chapter 6 – Volume

Let's Get Started 6

- 2 l 450 ml = **2450 ml**
- 1 l 32 ml = **1032 ml**
- 1 l 045 ml = **1045 ml**
- 4 l 560 ml = **4560 ml**
- 67 ml = **0 l 67 ml**
- 639 ml = **0 l 639 ml**
- 3892 ml = **3 l 892 ml**
- 7780 ml = **7 l 780 ml**

Ask Yourself

- Julie has more lemonade
- She has 260 ml more lemonade.

Think Further

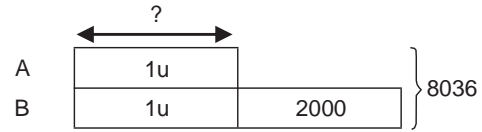
J	1032	1032
K	1032	

$$1032 \text{ ml} = 1 \text{ l } 32 \text{ ml}$$

Kayla would have **1 l 32 ml** more lemonade than Julie.

Let's Practise 6

Question 1



$$2u = 8036 - 2000$$

$$= 6036$$

$$1u = 6036 \div 2$$

$$= 3018$$

$$3018 \text{ ml} = 3 \text{ l } 18 \text{ ml}$$

Container A has **3 l 18 ml** of fruit punch.

Question 2

J	200	
MW	200	10

(a) $200 \times 5 = 1000$

Philip bought 1000 l of juice.

(b) $210 \times 10 = 2100$

Philip bought 2100 l of mineral water.

$$2100 - 1000 = 1100$$

Phillip bought **1100 l more** mineral water than juice.

Question 3

(a) $1000 - 250 = 750$

750 ml of soya bean milk was poured into 5 cups.

$$750 \div 5 = 150$$

150 ml of soya bean milk was poured into each cup.

(b) $250 - 150 = 100$

William drank **100 ml** less soya bean milk than mother.

Question 4

(a) $350 \times 8 = 2800 \text{ ml}$

The kettle can hold a total of 2800 ml of water.

(b) $2800 - 2100 = 700$

The kettle needs another 700 ml of water before it overflows.

$350 + 350 = 700$

The kettle can still hold another **2 mugs of water** before it overflows.

Question 5

At first

A	50
B	50

End

A	8	42	
B	8	37	5

$50 - 8 = 42$

42 ml of water was poured out from Container A.

$42 - 37 = 5$

5 ml of water was poured out of Container B.

Question 6

At first

C	
S	

End

C	1u	12	3
S	1u	12	3

$\leftarrow 3u \rightarrow$

$3u = 12$

$1u = 12 \div 3$
= 4

There was 4 l of cooking oil in the end.

$4 + 15 = 19$

There was **19 l** of cooking oil at first.

Question 7

End

R	
B	

At first

R	1u	1300	800	}	3900
B	1u	1300			

$2u = 3900 - 1300 - 800$

= 1800

$1u = 1800 \div 2$

= 900

There were 900 ml of detergent in the blue can at first.

$900 + 1300 = 2200$

$2200 \text{ ml} = 2 \text{ l } 200 \text{ ml}$

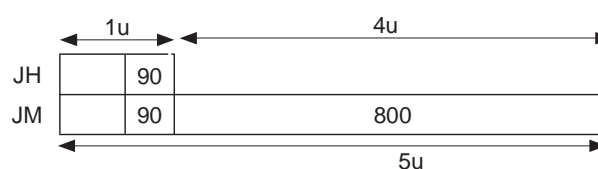
There were **2 l 200 ml** of detergent in each can in the end.

Question 8

End

JH	
JM	

At first



$4u = 800$

$1u = 800 \div 4$
= 200

Mother prepared **200 ml** of guava juice for Jiahui.

Question 9



$$3u = 1700 + 3682$$

$$= 5382$$

$$1u = 5382 \div 3$$

$$= 1794$$

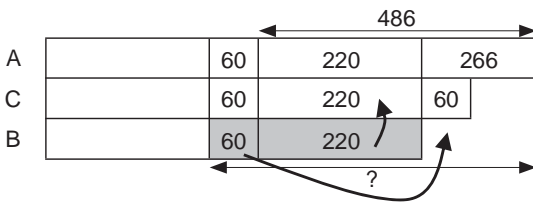
Tank Z contained 1794 ml of water at first.

$$1794 - 50 = 1744$$

$$1744 \text{ ml} = 1 \ell 744 \text{ ml}$$

There were **1 ℓ 744 ml** of water in Tank Z in the end.

Question 10



$$60 + 486 = 546$$

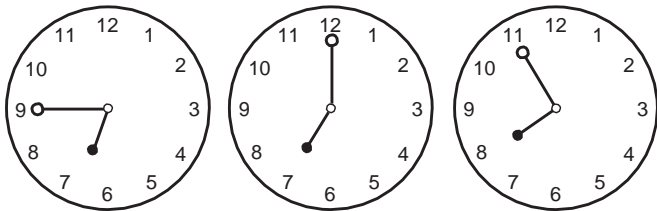
There is a difference of **546 ml of water** between Pail A and Pail B.

Answers to Chapter 7.1 – Finding the Duration of Time Interval

Let's Get Started 7.1

Start time: 6.45 a.m.

End time: 7.55 a.m.



$$\text{Total time taken} = 15 \text{ min} + 55 \text{ min}$$

$$= 70 \text{ min}$$

Since 60 min is 1 hour, 70 min = 1 h 10 min

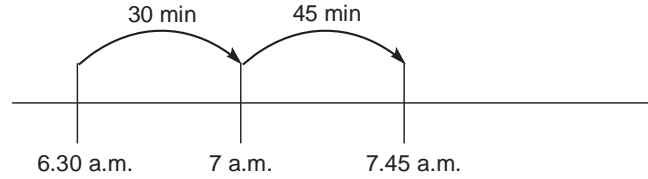
ok 1 h 10 min to reach his workplace.

Ask Yourself

1. Kendra started her Ballet lesson at 9.30 a.m.
2. Kendra ended her Ballet lesson at 10.45 a.m.
3. To find the duration, you will need to draw a time line.

Let's Practise 7.1

Question 1



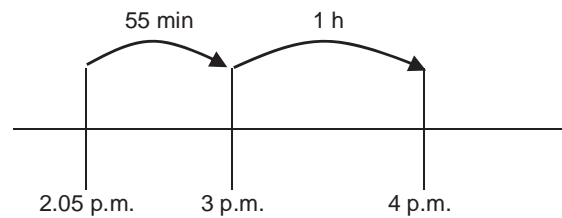
$$\text{Time he ran} = 30 \text{ min} + 45 \text{ min}$$

$$= 75 \text{ min}$$

$$75 \text{ min} = 1 \text{ h } 15 \text{ min}$$

He ran for **1 h 15 min**.

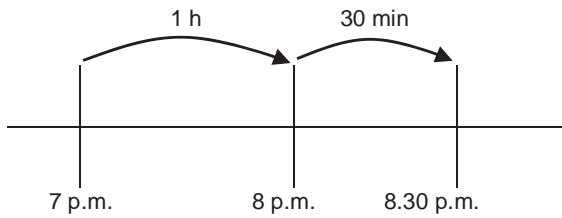
Question 2



$$55 \text{ min} + 1 \text{ h} = 1 \text{ h } 55 \text{ min}$$

The ferry ride was **1 h 55 min**.

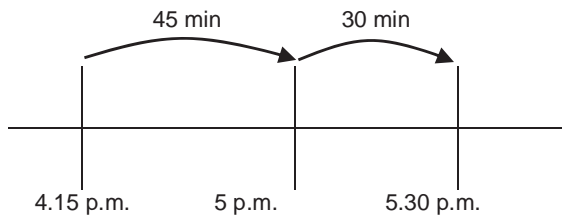
Question 3



1 h + 30 min = 1 h 30 min
 Since 1 h = 60 min,
 1 h 30 min = 60 min + 30 min
 = 90 min

He took **90 min** to reach the airport.

Question 4



Total time taken = 45 min + 30 min
 = 75 min

The programme lasted **75 min**.

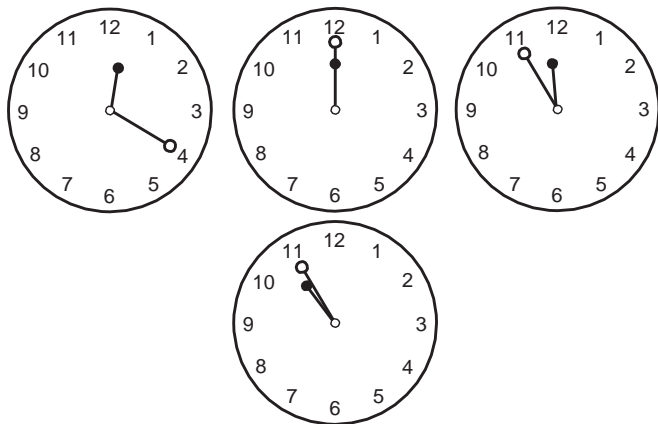
Answers to Unit 7.2 – Finding Start Time

Let's Get Started 7.2

End time: 12.20 p.m.

Start time: ?

Duration: 1 h 45 min = 60 min + 45 min = 105 min



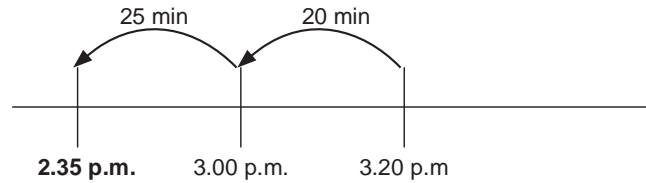
To find the start time, we count in anti-clockwise
 The start time of the paper was 10.35 a.m.

Ask Yourself

- The time needed to bake the cake was 2 h 10 min.
- To find the duration, you will need to draw a time line and work backwards.

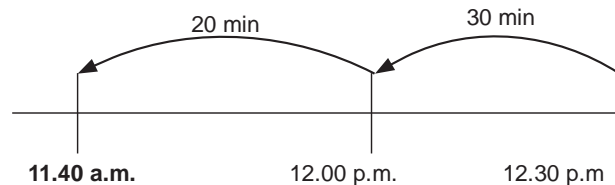
Let's Practise 7.2

Question 1



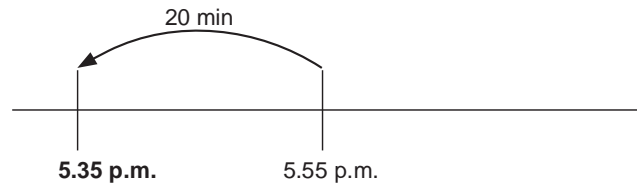
She left home at **2.35 p.m.**

Question 2



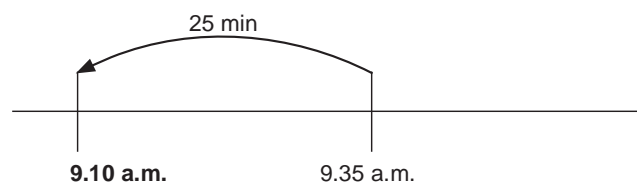
Tom's wife had her lunch at **11.40 a.m.**

Question 3



Ben's watch showed **5.35 p.m.**

Question 4



Kim started swimming at **9.10 a.m.**

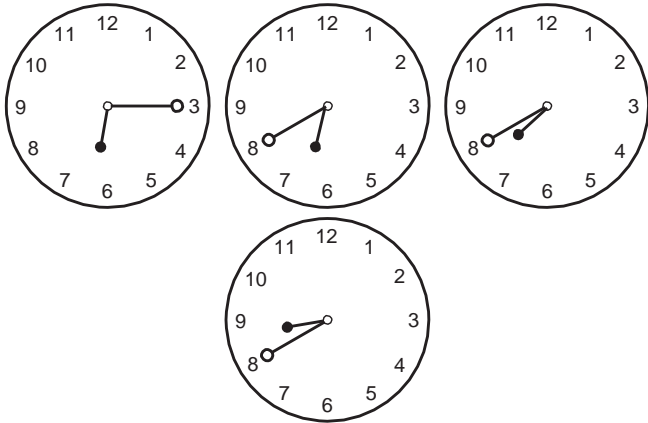
Answers to Unit 7.3 – Finding End Time

Let's Get Started 7.3

Start time: 6.15 a.m.

End time: ?

Duration: 2 h 25 min



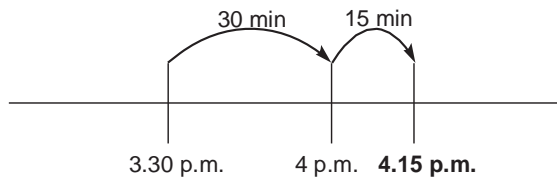
To find the start time, we count in clockwise direction.
The first runner ended the race at 8.40 a.m.

Ask Yourself

1. She started doing her homework at 5.30 p.m.
2. She took 1 h 40 min to complete her homework.

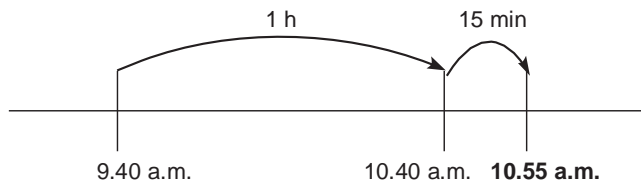
Let's Practise 7.3

Question 1



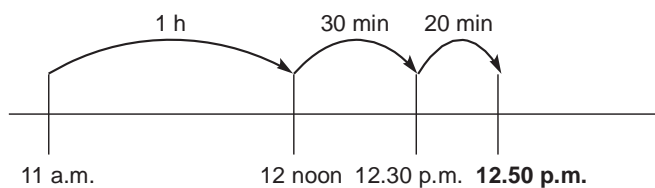
June completed her exercise at **4.15 p.m.**

Question 2



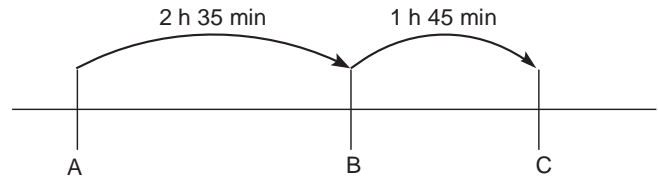
Susan reached the park at **10.55 a.m.**

Question 3



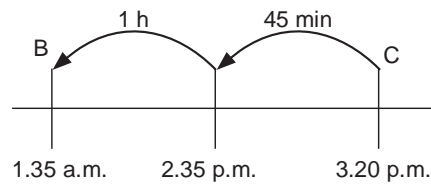
Mrs Lee reached home at **12.50 p.m.**

Question 4



- (a) Since 1 h = 60 min, 2 h = 120 min
 $2\text{ h } 35\text{ min} = 120\text{ min} + 35\text{ min}$
 $= 155\text{ min}$
 $1\text{ h } 45\text{ min} = 60\text{ min} + 45\text{ min}$
 $= 105\text{ min}$
 $155\text{ min} - 105\text{ min} = 50\text{ min}$
 It is **50 min faster**.

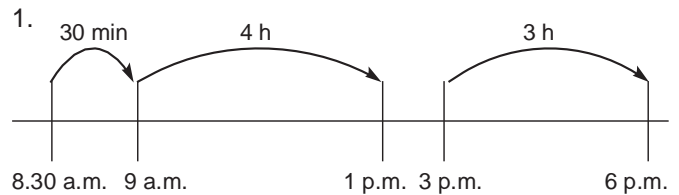
(b)



The train left Town B at **1.35 p.m.**

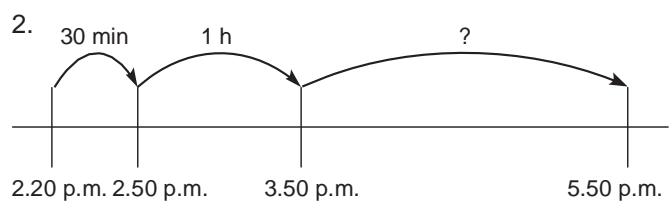
Answers to Review Questions Chapter 7

Review Questions 7

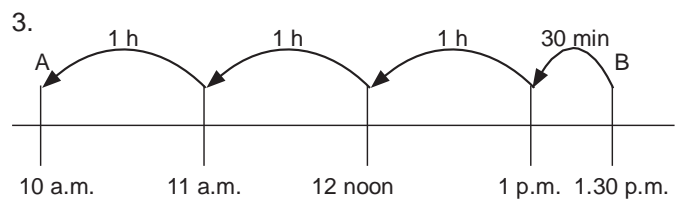


$30\text{ min} + 4\text{ h} + 3\text{ h} = 7\text{ h } 30\text{ min}$

The clinic opens for **7 h 30 min** each day.



From the time line, he took a nap for **2 h**.



He left Town A at **10 a.m.**

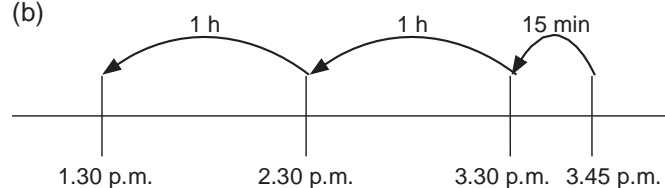
4.

Since 1 h = 60 min, 2 h = 120 min
 2 h 15 min = 120 min + 15 min
 = 135 min

- (a) $135 \text{ min} - 25 \text{ min} = 110 \text{ min}$
 $110 \text{ min} = 60 \text{ min} + 50 \text{ min}$
 = 1 h 50 min

Lucy spent **1 h 50 min** walking around the zoo.

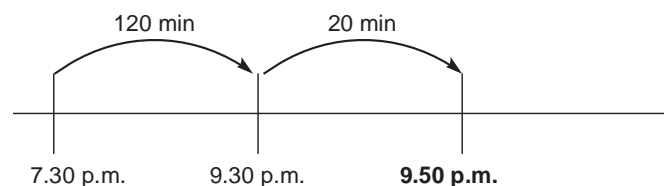
(b)



Lucy arrived at the zoo at **1.30 p.m.**

5.

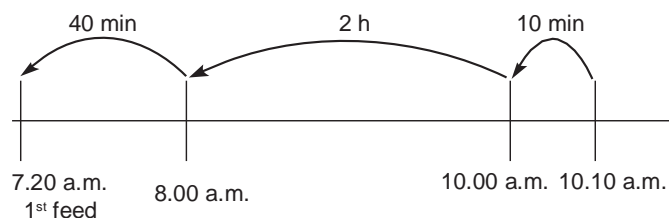
1 h 10 min = 70 min
 70 min + 70 min = 140 min



Jean completed her jigsaw puzzle at **9.50 p.m.**

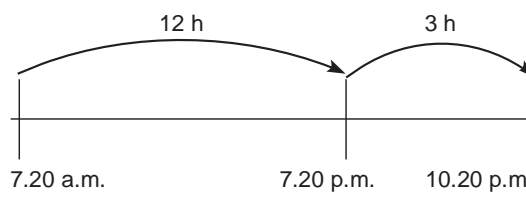
6.

Since 60 min = 1 h, 120 min = 2 h,
 170 min = 120 min + 50 min
 = 2 h 50 min



The first feed was at 7.20 a.m.

Time taken for last feed = 3×5
 = 15



Its last feed for the day was at **10.20 p.m.**

Answers to Unit 8.1 – Graphs

Let's Get Started 8.1

- 4 make 100.
 Hence, 8 make 200.
- $\odot = 13 - 8$
 $= 5$
 $\clubsuit = 8 - 5$
 $= 3$
 $\odot \times \clubsuit = 5 \times 3$
 $= 15$

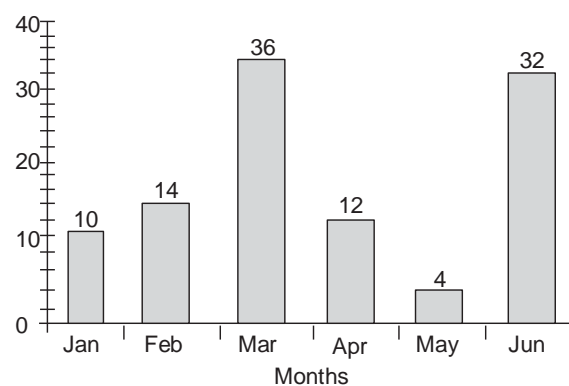
Ask Yourself

- 5 small divisions = 20
 small division = $20 \div 5$
 $= 4$

Let's Practise 8.1

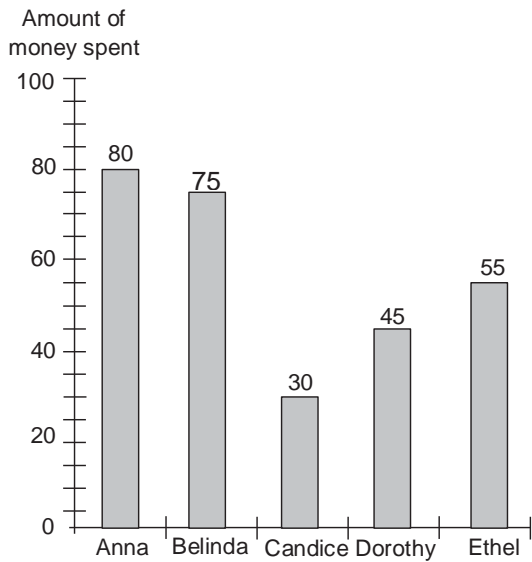
Question 1

Number of computers sold



- (a) $36 - 14 = 22$
22 more computers were sold in March than in February.
- (b) $3 \times 4 = 12$
 Three times as many computers were sold in **April** than in the month of May.

Question 2



(a) $4 \times 30 = 120$

Four times of Candice's money was \$120.

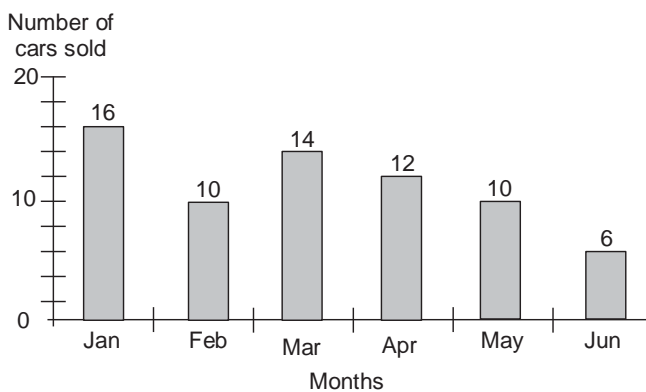
$75 + 45 = 120$

Belinda and **Dorothy** spent 4 times the amount that was spent by Candice.

(b) $80 + 75 + 30 + 45 + 55 = 285$

The girls spent a total of **\$285** during the holidays.

Question 3



(a) $2 \times 6 = 12$

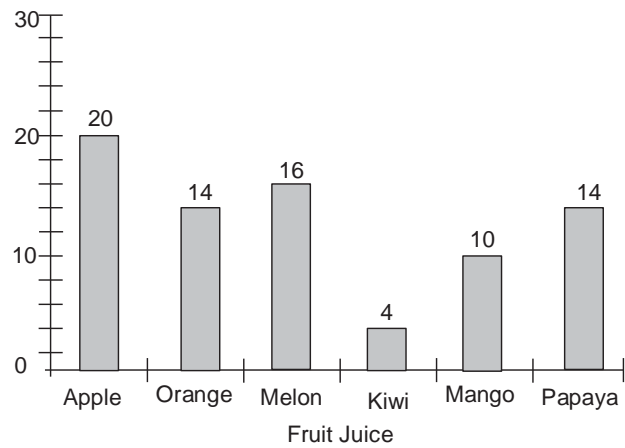
Harry sold twice the number of cars in **February** and **April** than in June.

(b) $10 \times 150 = 1500$

He received **\$1500** in the month of May.

Question 4

Number of cups of fruit juice sold



$20 + 14 + 4 + 10 + 14 = 62$

$78 - 62 = 16$

Mr Lim sold **16 cups of melon juice**.

Question 5

(a)

Henry: $7 \times 2 = 14$

Ian: $4 \times 2 = 8$

Jason: $6 \times 2 = 12$

Kyle: $3 \times 2 = 6$

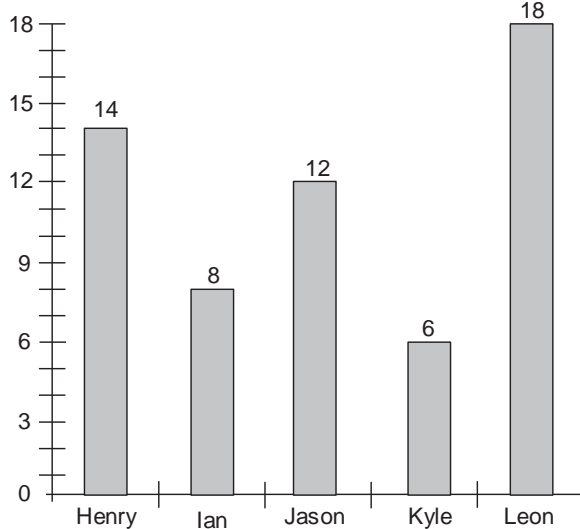
Leon: $9 \times 2 = 18$

$14 + 8 + 12 + 6 + 18 = 58$

They read **58 books** altogether.

(b)

Number of books read



Answers to Chapter 9

Let's Get Started 9

- (a) 55¢ (b) 120¢
(c) 80¢ (d) 345¢
- (a) \$0.85 (b) \$2.25
(c) \$4.00 (d) \$5.95
- (a) \$0.35
(b) \$2.25
(c) \$11.15
(d) \$89.90
- (a) Sixty five cents
(b) Three dollars and ninety-five cents
(c) Twelve dollars and fifty cents
(d) Ninety-three dollars and twenty-five cents
- Two 50-cent coins and 7 twenty cent coins make **\$2.40**.
- One \$1 coin, 3 50-cent coins and 4 20-cent coins make **\$3.30**.
- Three \$10-note, five 10-cent coins and eight 5-cent coins make **\$30.90**.
- One \$50-note and six \$10-notes make **\$110**.

Answers to Chapter 9.1 - Addition and Subtraction of dollars and cents

Let's Get Started 9.1

- | | |
|---|-----|
| B | 632 |
| T | 524 |
- | | |
|----|----|
| Jo | 52 |
| Ju | 67 |
| K | 23 |

Think Further

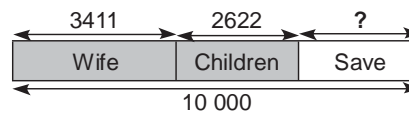
- $3 \times \$50 = \150
 $1 \times \$10 = \10
 $1 \times \$5 = \5
 $\$150 + \$10 + \$5 = \165
She had 3 \$50-notes, 1 \$10-note, 1 \$5-note, at first.

Let's Practise 9.1

Question 1

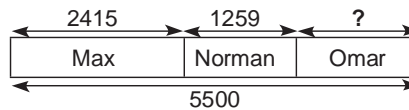
One \$2-note = \$2
Two 50¢ coins = 50¢ + 50¢
= \$1
One 20¢ coin = 20¢
= \$0.20
Two 10¢ coins = 10¢ + 10¢
= 20¢ = \$0.20
 $\$2 + \$1 + \$0.20 + \$0.20 = \$3.40$
Christopher received \$3.40 from his father.
 $\$13.60 + \$3.40 = \$17$
Christopher had **\$17** in the end.

Question 2



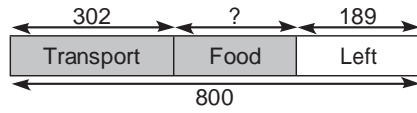
$3411 + 2622 = 6033$
Mr Lee gave \$6033 to his wife and children.
 $10\ 000 - 6033 = 3967$
He saved **\$3967** of his bonus.

Question 3



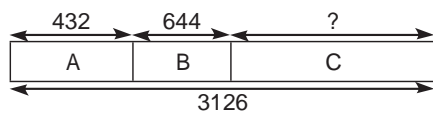
$2415 + 1259 = 3674$
Max and Norman received \$3674.
 $5500 - 3674 = 1826$
Omar received **\$1826**.

Question 4



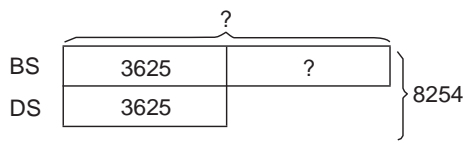
- (a) $800 - 189 - 302 = 309$
She spend **\$309** on food.
- (b) $302 + 309 = 611$
She spend **\$611** on transport and food.

Question 5



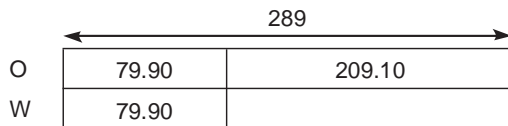
- $644 + 432 = 1076$
Family A and B received \$1076.
- $3126 - 1076 = 2050$
Family C received **\$2050**.

Question 6



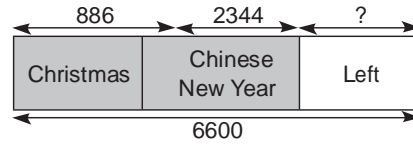
- (a) $8254 - 3625 = 4629$
The bedroom set cost **\$4629**.
- (b) $4629 - 3625 = 1004$
The bedroom set cost \$1400 more.

Question 7



- $289 + 79.90 = 368.90$
The total cost of oven and waffle maker is \$368.90.
- $368.90 - 340 = 28.90$
She needs **\$28.90** more.

Question 8

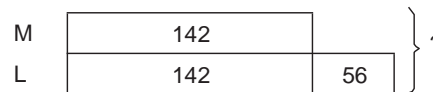


- $2344 + 886 = 3230$
\$3230 were given away.
- $6600 - 3230 = 3370$
\$3370 was left.

Question 9

- $50 \times 3 = 150$
Mrs See gave the cashier \$150.
- $150 - 89.90 - 39.90 = 20.20$
She received **\$20.20** change.

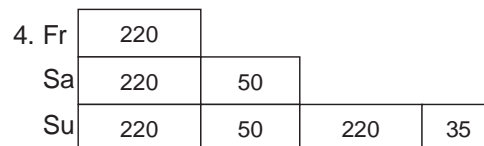
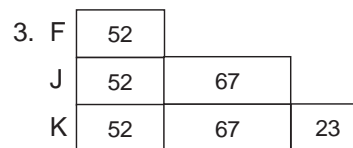
Question 10



- $142 + 142 + 56 = 340$
The two girls have **\$340** altogether.

Answers to Chapter 9.2

Let's Get Started 9.2



Think Further

J	195	
F	195	82
M	195	\leftarrow 45 \rightarrow

$$82 - 45 = 37$$

He saved \$37 more in March than in January.

Let's Practise 9.2

Question 1

L	89	
G	89	42

\leftarrow ? \rightarrow

(a) $89 + 42 = 131$

Gayle had **\$131**.

(b) $89 + 131 = 220$

They had **\$220** altogether.

Question 2

M	96	
J	96	88

\leftarrow ? \rightarrow

(a) $96 + 88 = 184$

Julia has \$184

(b) $184 + 96 = 280$

They had **\$280** altogether.

Question 3

T		138
E	?	

\leftarrow 502 \rightarrow

(a) $502 - 138 = 364$

Elliot had **\$364**.

(b) $502 + 364 = 866$

They had **\$866** altogether.

Question 4

P	3.20	
D	3.20	6.25

} ?

$$3.20 + 6.25 = 9.45$$

The durian cost \$9.45.

$$3.20 + 9.45 = 12.65$$

The total cost of the durian and papaya is **\$12.65**.

Question 5

At first

K		85
L		

After

	\leftarrow 100 \rightarrow			
K		35	15	35
L	?	35	15	

$$100 - 35 = 65$$

Lucy had **\$65** at first.

Question 6

At first

R	68	
H	68	20

After

K	23	45		
L	23	45	20	45

←————— ? —————→

$$68 - 45 = 23$$

Richard has \$23 in the end.

$$45 + 20 + 45 = 110$$

Hasnah has **\$110** more than Richard.

Question 7

At first

A		
H		285

Change

A	240		
H	240	278	27

←————— 545 —————→

End

A	240		
H	240	278	?

←————— 545 —————→

$$240 + 278 + 285 = 803$$

Haim had \$803 at first.

$$803 - 545 = 258$$

The bag cost **\$258**.

Question 8

At first

U		5.70
A		

$$39 + 1.70 = 40.70$$

Aunt Maggie spent \$40.70

After

U	1u	40.70	5.70	} 484.40
A	1u	40.70		

$$484.40 - 40.70 - 5.70 = 438$$

They have a total of \$438 in the end.

$$438 \div 2 = 219$$

Aunt Maggie had **\$219** in the end.

Question 9

M	2437	575	} ?
A	2437		
S	1385		

$$2437 + 575 = 3012$$

Michelle had \$3012.

$$3012 + 2437 + 1385 = 6834$$

The three children have **\$6834** altogether.

Question 10

L	126		} ?
H	126	256	

$$126 + 256 = 382$$

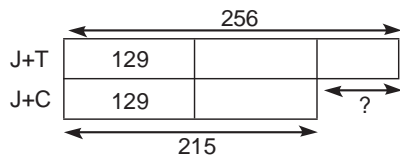
Hwee Ping received \$382

$$382 + 126 = 508$$

The two sisters received **\$508** from their mother.

Review Questions Chapter 9

Question 1



- (a) $256 - 215 = 41$
Tiara had **\$41 more** than Charmaine.
- (b) $215 - 129 = 86$
Charmaine had \$86.
 $129 + 127 + 86 = 342$
They had **\$342 altogether**.

Question 2

At first

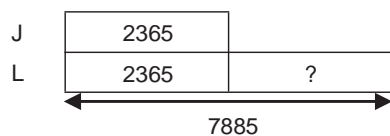
C	
D	

End

C	325	20	20
D	325	20	20

$325 + 20 + 20 = 365$
Each girl saved **\$365** at first.

Question 3



$7885 - 2365 = 5520$
He spent **\$5520** more in London than Japan.

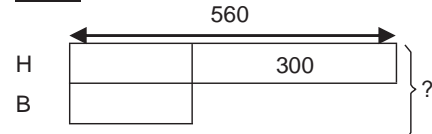
Question 4

Pens	Pens \$	Rulers	Rulers \$	Total \$	Check
15	$15 \times 2 = 30$	0	0	30	×
14	$14 \times 2 = 28$	1	10	29	×
5	$5 \times 2 = 10$	10	10	20	√

$10 \div 1 = 10$
 $15 - 10 = 5$
He bought **10 rulers** and **5 pens**.

Question 5

At first



End

H	1u		} 820
B	1u	130	

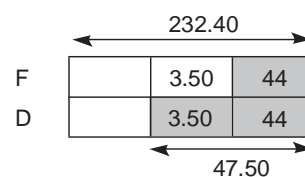
- (a) $560 - 300 = 260$
His brother received \$260.
 $560 + 260 = 820$
They received a total of **\$820 at first**.
- (b) $2u = 820 - 130$
 $= 690$
 $1u = 690 \div 2$
 $= 345$
Hashim must have \$345 in the end.
 $560 - 345 = 215$
Hashim must give his brother **\$215**.

Question 6

End

F	
D	

At first



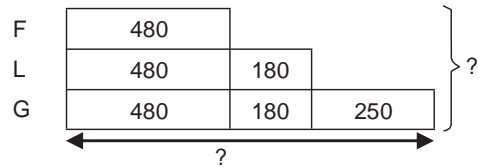
$$232.40 - 47.50 = 184.90$$

Dan had \$184.90 at first.

$$184.90 + 184.90 + 3.50 = 373.30$$

They had **\$373.30** in total at first.

Question 7



(a) $480 + 180 + 250 = 910$

Giselle had **\$910**.

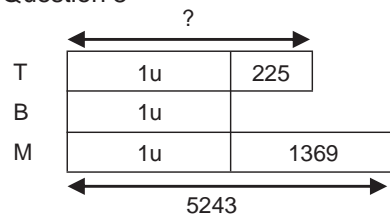
(b) $480 + 180 = 660$

Ling had \$660.

$$480 + 660 + 910 = 2050$$

The three girls had **\$2050** altogether.

Question 8



$$1u = 5243 - 1369$$

$$= 3874$$

$$3874 + 255 = 4129$$

The ceramic table cost **\$4129**.

Question 9

$$1E = \$2.50$$

$$1P = \$2.50 - \$1$$

$$= \$1.50$$

E	1u	x	2.50	2.5u
P	5u	x	1.50	7.5u
Total	6u	-	-	10u

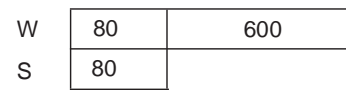
$$10u = 80$$

$$1u = 80 \div 10$$

$$= 8$$

James bought **8** erasers.

Question 10



(a) $600 \div 2 = 300$

Winnie must give Sharifah **\$300**.

(b) $600 + 80 + 80 = 760$

The two girls have **\$760** altogether.

Question 11

\$2 notes	4u	x	2	8u
\$5 notes	1u	x	5	5u
Total	3u	-	-	13u

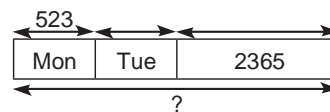
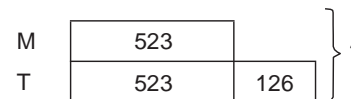
$$3u = 150$$

$$1u = 150 \div 3$$

$$= 50$$

Sandy has **50** \$5-notes.

Question 12



(a) $523 + 126 = 649$

Veronica spent \$649 on Tuesday.

$$523 + 649 = 1172$$

Veronica spent **\$1172** in total.

(b) $1172 + 2365 = 3537$

Veronica had **\$3537** at first.

Answers to Chapter 10.1 - Comparing and Ordering Fractions

Let's Get Started 10.1

Figure 1

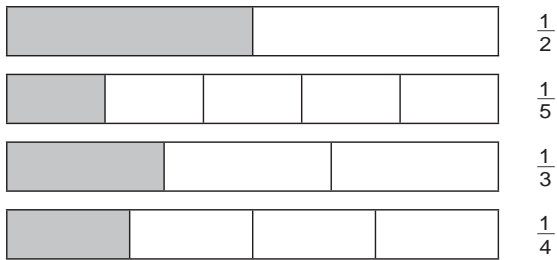


Figure 2

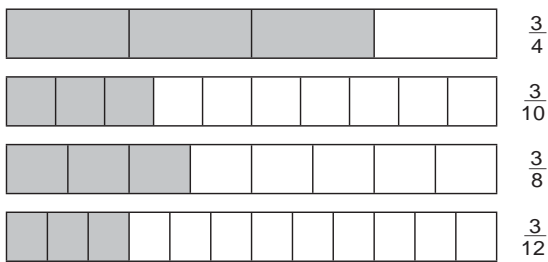
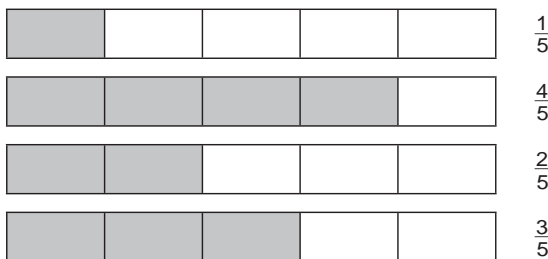


Figure 3



Figure 4



3. Figure 1 : $\frac{1}{5}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$
 Figure 2 : $\frac{3}{12}$ $\frac{3}{10}$ $\frac{3}{8}$ $\frac{3}{4}$
4. The numerators are the same and each represents 1 part of the entire model.
5. The denominators are all of different numbers unlike that of the numerators. The denominators represent the total number of equal parts that each model has been divided.
6. Figure 3 : $\frac{9}{8}$ $\frac{5}{8}$ $\frac{4}{8}$ $\frac{2}{8}$
 Figure 4 : $\frac{4}{5}$ $\frac{3}{5}$ $\frac{2}{5}$ $\frac{1}{5}$
7. The denominators are the same number (8 parts) and they represent the total parts that the model has been divided.

Think Further

1. When comparing fractions with the same numerators, the smallest fraction is the one with the greatest denominator.
2. When comparing fractions with the same denominators, the smallest fraction is the one with the smallest numerator.

Let's Practise 10.1

Question 1

$\frac{4}{5}$ $\frac{4}{6}$ $\frac{4}{9}$ $\frac{4}{12}$

Question 2

$\frac{9}{12}$ $\frac{7}{12}$ $\frac{5}{12}$ $\frac{2}{12}$

Question 3

$\frac{3}{4}$ $\frac{3}{5}$ $\frac{3}{7}$ $\frac{3}{9}$

Question 4

$\frac{8}{11}$ $\frac{6}{11}$ $\frac{5}{11}$ $\frac{3}{11}$

Question 1

$\frac{2}{9}$ $\frac{5}{9}$ $\frac{7}{9}$ $\frac{8}{9}$

Question 2

$\frac{2}{12}$ $\frac{2}{7}$ $\frac{2}{5}$ $\frac{2}{3}$

Question 3

$\frac{6}{11}$ $\frac{6}{9}$ $\frac{6}{8}$ $\frac{6}{7}$

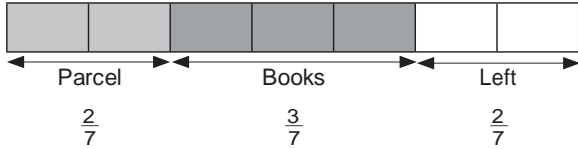
Question 4

$\frac{1}{9}$ $\frac{3}{9}$ $\frac{5}{9}$ $\frac{8}{9}$

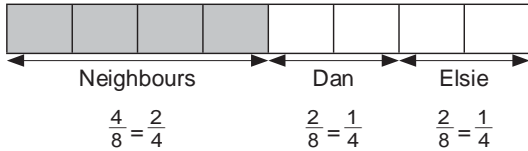
Answers to Chapter 10.2 Part Whole Fraction

Let's Get Started 10.2

2.



3.



Ask Yourself

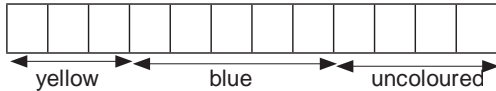
- The 12 m represents the whole while the 3 m and the 7 m represent the parts.

Think Further

- The fraction could not be greater than $\frac{1}{6}$ because the sum of the parts would be greater than the total whole. i.e. The sum of the pieces of the wire would exceed the total amount of 12 m. This is not possible.

Let's Practise 10.2

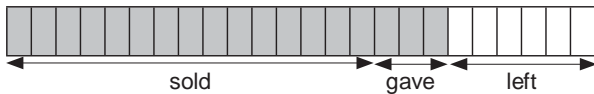
Question 1



$$\text{Fraction uncoloured} = \frac{4}{12} = \frac{1}{3}$$

$\frac{1}{3}$ of the paper was left uncoloured.

Question 2



$$\begin{aligned} \text{Fraction of the number of cakes left} &= \frac{6}{24} \\ &= \frac{1}{4} \end{aligned}$$

$\frac{1}{4}$ of the sponge cakes was left.

Question 3

$$1 \text{ day} = 3$$

$$7 \text{ days} = 3 \times 7$$

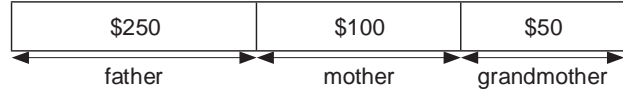
$$= 21$$

$$\text{Fraction} = \frac{21}{30}$$

$$= \frac{7}{10}$$

She sewed $\frac{7}{10}$ of the total number of dresses.

Question 4



$$250 + 100 + 50 = 400$$

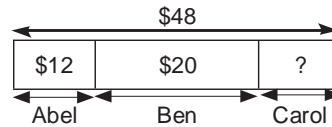
James received \$400

$$\text{Fraction} = \frac{100}{400}$$

$$= \frac{1}{4}$$

$\frac{1}{4}$ of James' total collection was from his mother.

Question 5



$$48 - 12 - 20 = 16$$

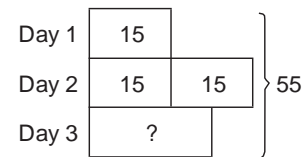
Carol paid \$16.

$$\text{Fraction} = \frac{16}{48}$$

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

Carol paid $\frac{1}{3}$ of the cost of the present.

Question 6



$$15 \times 2 = 30$$

30 cans were collected on Day 2.

$$55 - 30 = 25$$

25 cans were collected on Day 3.

$$\text{Fraction} = \frac{25}{55}$$

$$= \frac{5}{11}$$

$\frac{5}{11}$ of the number of cans was left to be collect on Day 3.

Answers to Chapter 10.3 - Addition and Subtraction of like and unlike Fractions

Let's Get Started 10.3

2.



$$\frac{3}{5} = \frac{6}{10} = \frac{12}{20}$$



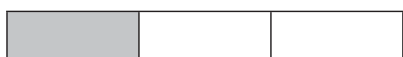
3.



$$\frac{1}{4} = \frac{3}{12}$$



4.



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



$$\frac{1}{3} = \frac{4}{12}$$

Ask Yourself

- The whole / entire cake can be represented by $\frac{4}{4}$ or simply 1.
- By first converting the fractions into equivalent fractions with the same denominator.

Think Further

$$\begin{aligned} \text{Cake eaten by father} &= \frac{2}{5} \\ &= \frac{4}{10} \end{aligned}$$

$$\begin{aligned} \frac{7}{10} - \frac{2}{5} &= \frac{7}{10} - \frac{4}{10} \\ &= \frac{3}{10} \end{aligned}$$

$\frac{3}{10}$ of the cake remained.

Let's Practise 10.3

Question 1

$$\begin{aligned} 1 - \frac{1}{4} - \frac{2}{4} &= 1 - \frac{3}{4} \\ &= \frac{1}{4} \end{aligned}$$

He will collect $\frac{1}{4}$ of the laundry the following day.

For more review questions, please visit www.onsponge.com

Question 2

$$\begin{aligned} 1 - \frac{1}{6} - \frac{2}{6} &= \frac{3}{6} \\ &= \frac{1}{2} \end{aligned}$$

Cathy was left with $\frac{1}{2}$ of her allowance.

Question 3

$$\begin{aligned} 1 - \frac{3}{10} - \frac{4}{10} &= 1 - \frac{7}{10} \\ &= \frac{3}{10} \end{aligned}$$

Mrs Hayma had $\frac{3}{10}$ of the cookies left.

Question 4

$$\frac{1}{8} + \frac{6}{8} = \frac{7}{8}$$

Mrs Sim used $\frac{7}{8}$ m of the fabric altogether.

Question 5

$$\begin{aligned} \frac{1}{8} + \frac{3}{8} &= \frac{4}{8} \\ &= \frac{1}{2} \end{aligned}$$

The total mass of the two items is $\frac{1}{2}$ kg.

Question 6

$$\frac{6}{9} - \frac{2}{9} = \frac{4}{9}$$

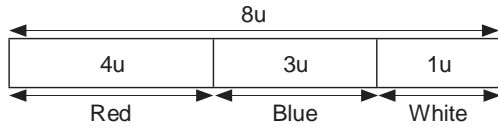
$\frac{4}{9}$ ℓ of the lilac paint was left.

Question 7

$$\begin{aligned} \frac{3}{12} - \frac{1}{6} &= \frac{3}{12} - \frac{2}{12} \\ &= \frac{1}{12} \end{aligned}$$

Wendy had an extra $\frac{1}{12}$ kg of cotton.

Question 8



$$3u = 12$$

$$1u = 12 \div 3$$

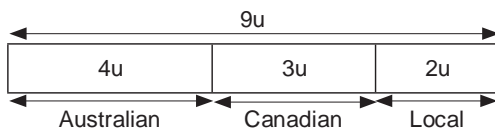
$$= 4$$

$$8u = 8 \times 4$$

$$= 32$$

There were **32 beads** in the box.

Question 9



$$2u = 48$$

$$1u = 48 \div 2$$

$$= 24$$

$$3u = 3 \times 24$$

$$= 72$$

There are **72 Canadian stamps**.

Question 10

$$(a) \frac{1}{4} + \frac{7}{12} = \frac{3}{12} + \frac{7}{12}$$

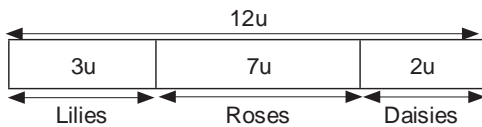
$$= \frac{10}{12}$$

$\frac{10}{12}$ of the flowers were lilies and roses.

$$1 - \frac{10}{12} = \frac{2}{12}$$

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

$\frac{1}{6}$ of the flowers are daisies.



$$(b) 5u = 35$$

$$1u = 35 \div 5$$

$$= 7$$

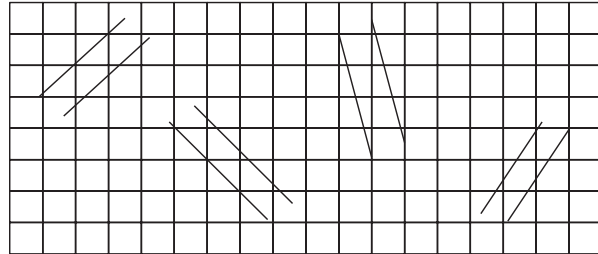
$$7u = 7 \times 7$$

$$= 49$$

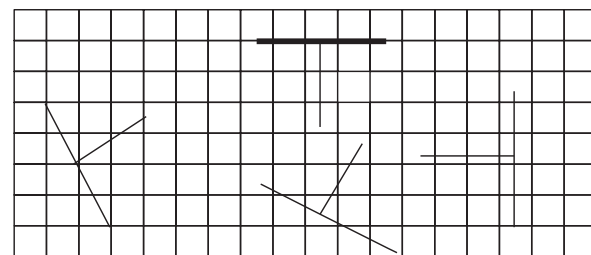
There are **49 stalks of roses**.

Let's Get Started 11

1.



2.

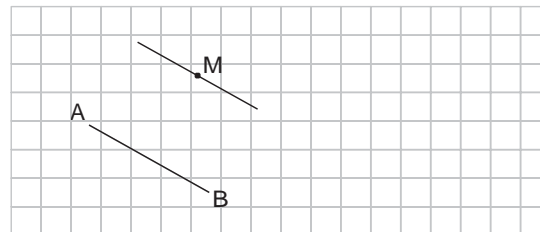


Ask Yourself

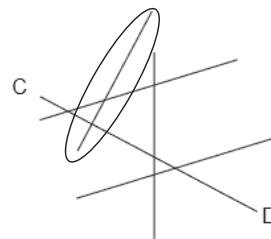
- The parallel lines are likely to be found in on the opposite sides in the figure.
- There are no perpendicular lines in the figure.

Let's Practise 11

Question 1

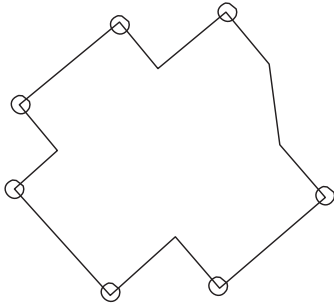


Question 2



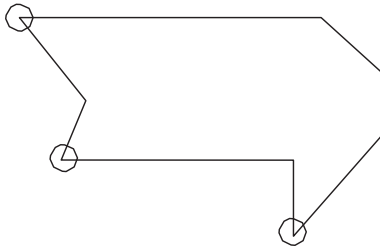
Question 3

There are 7 right angles in the figure.



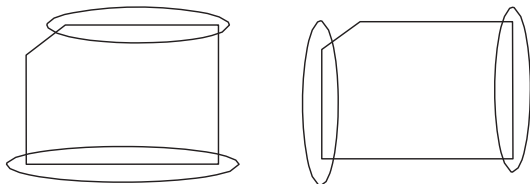
Question 4

There are 3 angles in the figure below that are smaller than a right angle.

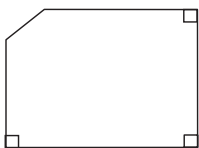


Question 5

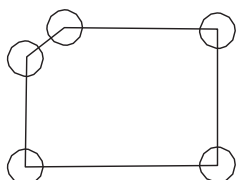
There are two pairs of parallel lines.



There are 3 pairs of perpendicular lines.

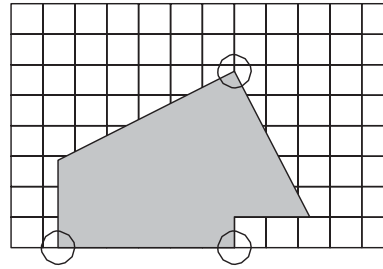


There are 5 angles in the figure



Question 6

There are 3 right angles in the figure below.



Answers to Chapter 12 – Area and Perimeter

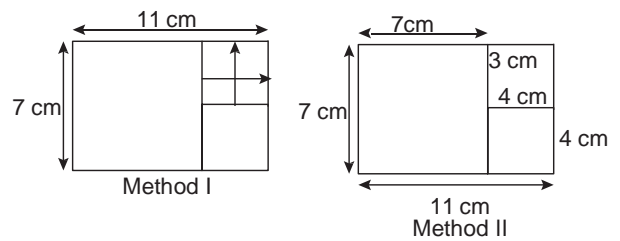
Let's Get Started 12

2. Perimeter = 8 cm + 5 cm + 8 cm + 5 cm
= 26 cm
Area = 8 cm × 5 cm
= 40 cm²

3. Perimeter = 12 cm + 4 cm + 12 cm + 4 cm
= 32 cm
Area = 12 cm × 4 cm
= 48 cm²

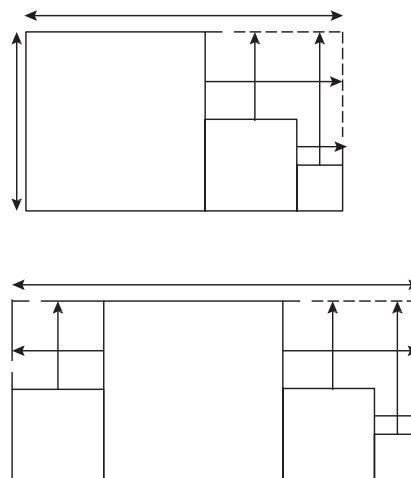
Ask Yourself

1. There are two ways.



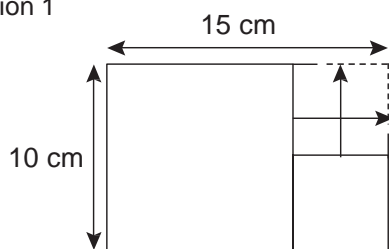
Think Further

1. No. The method is still the same.



Let's Practise 12

Question 1



$$\begin{aligned} \text{Perimeter} &= 10 + 15 + 10 + 15 \\ &= 50 \end{aligned}$$

$$\begin{aligned} \text{Area Big Square} &= 10 \times 10 \\ &= 100 \end{aligned}$$

$$\begin{aligned} \text{Area Small Square} &= 5 \times 5 \\ &= 25 \end{aligned}$$

$$\begin{aligned} \text{Total Area} &= 100 + 25 \\ &= 125 \end{aligned}$$

The perimeter and area of the figure is **50 cm** and **125 cm²** respectively.

Question 2

$$10 + 8 + 5 + 12 + 15 = 50$$

The perimeter of the figure is **50 cm**.

Question 3

$$10 + 5 + 4 + 7 + 12 + 15 = 53$$

The perimeter of the figure is **53 cm**.

Question 4

$$\begin{aligned} \text{Perimeter 1 rectangle} &= 6 + 3 + 6 + 3 \\ &= 18 \end{aligned}$$

$$\begin{aligned} \text{Perimeter of 2 rectangles} &= 18 + 18 \\ &= 36 \end{aligned}$$

$$\begin{aligned} \text{Perimeter of 3 stacked rectangles} &= 6 + 9 + 9 + 6 \\ &= 30 \end{aligned}$$

$$\begin{aligned} \text{Total perimeter} &= 36 + 30 \\ &= 66 \end{aligned}$$

The perimeter of the figure is **66 cm**.

Question 5

$$\begin{aligned} \text{Area of Square A} &= 5 \times 5 \\ &= 25 \end{aligned}$$

$$\begin{aligned} \text{Area of Rectangle B} &= 8 \times 4 \\ &= 32 \end{aligned}$$

$$\begin{aligned} \text{Total area of figure} &= 25 + 32 \\ &= 57 \end{aligned}$$

The area of the figure is **57 cm²**.

Question 6

$$\text{Breadth of Square A} = 10 \text{ cm}$$

$$\begin{aligned} \text{Area of Square A} &= 10 \times 10 \\ &= 100 \end{aligned}$$

$$\begin{aligned} \text{Length of Rectangle B} &= 10 \times 2 \\ &= 20 \end{aligned}$$

$$\begin{aligned} \text{Area of Rectangle B} &= 20 \times 10 \\ &= 200 \end{aligned}$$

$$100 + 200 = 300$$

The area of the figure is **300 cm²**.

Question 7

$$\begin{aligned} \text{Area of Rectangle B} &= 12 \times 5 \\ &= 60 \end{aligned}$$

$$\begin{aligned} \text{Area of Rectangle A} &= 60 \div 2 \\ &= 30 \end{aligned}$$

The area of Rectangle A is **30 cm²**.

Question 8

$$2 \text{ m} = 200 \text{ cm}$$

$$\begin{aligned} \text{Length of fence} &= 200 + 50 + 200 + 50 \\ &= 500 \end{aligned}$$

She needed **500 cm** of fence.

Question 9

$$\begin{aligned} \text{Area of cloth} &= 90 \times 10 \\ &= 900 \end{aligned}$$

$$\begin{aligned} \text{Area of 1 square} &= 10 \times 10 \\ &= 100 \end{aligned}$$

$$\begin{aligned} \text{Area of 4 squares} &= 4 \times 100 \\ &= 400 \end{aligned}$$

$$900 - 400 = 500$$

The area of cloth that remained was **500 cm²**.

Question 10

$$\begin{aligned} \text{Area of bedroom} &= 12 \times 4 \\ &= 48 \end{aligned}$$

$$48 - 12 = 36$$

36 m² of the bedroom was not covered.

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While every care has been taken to compile this answer booklet, errors may still arise in the course of compilation and production. If you notice any error, kindly write to feedback@onsponge.com so that we can review it.