Primary 2 Challenging 4-in-1 Maths Worked Solutions



Unit 1

Section A

```
1. 4 8 9

8 tens = 80

Option (1): 3 + 5 = 8

Option (2): 48 + 9 = 57

Option (3): 57 + 23 = 80

Option (4): 9 + 80 = 89

Ans: (3)
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2. 10 tens = 1 hundred 20 tens = 2 hundreds 23 tens = 20 tens + 3 tens = 2 hundreds + 3 tens = 200 + 30 = 230 23 tens 6 ones = 230 + 6

> Option (1): 13 tens 48 ones = 10 tens + 3 tens + 48 ones = 1 hundred + 3 tens + 48 ones = 100 + 30 + 48 = 130 + 48

Option (4): 2 hundreds 38 ones = 200 + 38 = 238

Ans: (3)

4. 338, 383, 388, 833, 838, 883 Ans: (3)

5. 4 hundreds = 400 14 tens 56 ones = 10 tens + 4 tens + 56 ones = 1 hundred + 4 tens + 56 ones = 100 + 40 + 56 = 140 + 56 = 196 400 - 196 = 204 Ans: (2)

> 200 + 2 = 202 402 - 202 = 200 Ans: (2)

Ans: (1)

8. Option (1): 30 tens 47 ones

= 3 hundreds 4 tens 7 ones

= 347

Option (2): 42 tens 7 ones

= 4 hundreds 2 tens 7 ones

= 427

Option (3): 41 tens 27 ones

= 4 hundreds 3 tens 7 ones

= 437

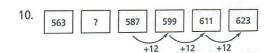
Option (4): 82 tens 13 ones

= 8 hundreds 3 tens 3 ones

= 833

Ans: (4)

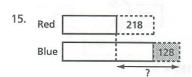
9. Digit in the tens place \longrightarrow 5 + 2 or 5 - 2 = 7 = 3 The possible numbers are 35 and 75. 35 + 75 = 110 Ans: (3)



563 + 12 = 575 The missing number in the pattern is 575. Ans: (2)

Section B

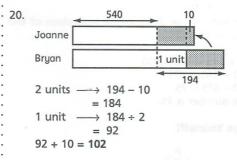
- 11. 25 tens = 20 tens + 5 tens = 2 hundreds + 5 tens = 200 + 50 = 250 45 ones = 45 6 hundreds 25 tens 45 ones = 600 + 250 + 45 = 850 + 45 = 895 925 - 895 = 30 6 hundreds 25 tens 45 ones is 30 less than 925.
- 12. 823 540 = 283The missing number in the box is **283**.
- 13. The largest 2-digit number is 99 and the smallest 3-digit number is 100.
 There are 9 tens in 99.
 There are 10 tens in 100.
 9 tens + 10 tens
 = 19 tens
 There are 19 tens altogether.
- 14. 11 tens = 10 tens + 1 ten = 1 hundred + 1 ten = 110 5 hundreds 11 tens = 500 + 110 = 610 610 - 58 = 552



218 + 128 = 346

16. 5 + 15 = 20

- 17. 63 tens = 60 tens + 3 tens = 6 hundreds + 3 tens 63 tens 33 ones = 6 hundreds + 3 tens + 33 ones = 600 + 30 + 33 = 630 + 33 = 663 17 tens = 10 tens + 7 tens = 1 hundred + 7 tens = 170 663 - 170 = 493
- Sum of digits = 7
 The possible numbers are 16, 25, 34, 43, 52, 61, 70.
 Smallest possible number = 16
 Largest possible number = 70
- 19. A = 891 341 = 550 B = 341 + 148 = 489 Difference = 550 - 489 = **61**



Section C

- 22. By guess and check

Even page number	Odd page number	Sum of facing page numbers
2	3	2 + 3 = 5 X
4	5	4+5=9 X
6	7	6 + 7 = 13 V

John stopped reading at page 7. Number of pages left to read → 200 – 7 = 193

John needs to read 193 more pages.

30

23. Smallest number: 278 Biggest number: 872

Difference
$$\longrightarrow$$
 800 – 8 = 792

The difference between the values of the digit 8 in the two numbers is **792**.

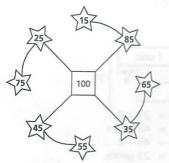
24. Biggest number: 876 Smallest number: 678

$$Sum \longrightarrow 7 + 7$$
$$= 14$$

The sum of the digits in the tens place of the two numbers is 14.

Challenge Yourself!

1.

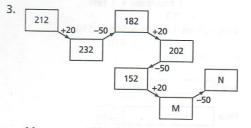


2. Method 1 693 + 47 - 446 = 294

0.011.2

Section A

$$852 - 632 = 220$$



$$\begin{array}{rcl} M & \longrightarrow & 152 + 20 \\ & = & 172 \\ N & \longrightarrow & 172 - 50 \\ & = & 122 \\ Sum & \longrightarrow & 172 + 122 \\ & = & 294 \\ Ans: (3) \end{array}$$

4.
$$\left\langle \right\rangle = 370$$

3 + 7 + 0 = 10

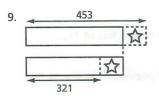
The sum of the digits in $\{ \}$ is 10. Ans: (2)

5. Possible 3-digit numbers: 348, 384, 438, 483, · 13. Missing number Ans: (4)

7. Biggest possible number: 499 Smallest possible number: 401 Difference → 499 - 401 = 98

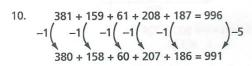
Ans: (2)

8. Largest 3-digit number: 999 Largest 2-digit number: 99 W ---- 999 - 99 = 900 1000 - 900 = 100Ans: (3)



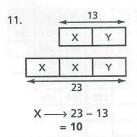
$$\begin{array}{rcl}
2 & \longrightarrow & 453 - 321 \\
& = & 132
\end{array}$$

$$\begin{array}{rcl}
& \longrightarrow & 132 \div 2 \\
& = & 66
\end{array}$$
Ans: (1)



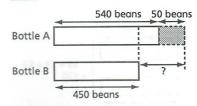
Ans: (3)

Section B



12.
$$156 + 172 = 328$$
Missing number $\longrightarrow 328 - 214$
= 114

- = 312 \rightarrow 3 + 1 + 2 Sum of the digits
- 14. _X X, 1 unit \longrightarrow 3 Y, 2 units \longrightarrow 3 \times 2 = 6 The 3-digit number is 346. Difference → 346 - 289 = 57
- 15. After



Difference, at first → 540 - 450 = 90 beans Difference, in the end - \rightarrow 90 + 50 = 140 beans

16.
$$935 - 280 = 655$$

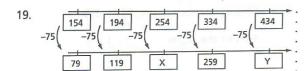
 $A \longrightarrow 369 - 280$
 $= 89$
 $B \longrightarrow 701 - 421$
 $= 280$
Sum of A and B $\longrightarrow 89 + 280$
 $= 369$

17. By guess and check

Number	Sum of its digi	ts
999	9 + 9 + 9 = 27	×
997	9 + 9 + 7 = 25	V
989	9+9+8=26	×
988	9+8+8=25	V
979	9 + 7 + 9 = 25	V

The numbers are 997, 988 and 979.

18. Biggest possible number: 549 Smallest possible number: 431 Difference → 549 – 431 = 118

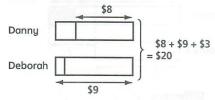


$$X \longrightarrow 254 - 75$$

= 179
 $Y \longrightarrow 434 - 75$
= 359
Sum of X and Y \longrightarrow 179 + 359
= 538

Section C

21. After

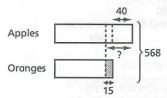


2 units
$$\longrightarrow$$
 \$20
1 unit \longrightarrow \$20 ÷ 2
= \$10

Amount of money Danny received → \$10 – \$8 = \$2

Danny will receive \$2 from Mrs Lee.

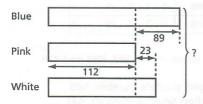




15 + 40 = 55

There are 55 more apples than fresh oranges in the box.





Number of blue ribbons \longrightarrow 112 + 89 = 201

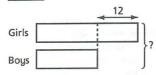
Number of blue and pink ribbons \longrightarrow 201 + 112

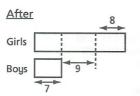
= 313

Number of white ribbons \longrightarrow 112 + 23 = 135 Total \longrightarrow 313 + 135 = 448

Jean has 448 ribbons altogether.

24. At first





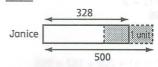
Number of girls on the bus at first

Number of boys on the bus at first

Total number of pupils on the bus at first

There were **44** pupils on the bus at first.

25. After



$$1 \text{ unit} \longrightarrow 500 - 328$$
$$= 172$$

Janice gave Hui Lin 172 marbles.

Challenge Yourself!

1. (a

Player	1	2	3	4	5
	169	259	349	457	567
	178	268	358	458	
	179	269	359	459	
Possible numbers	189	278	367	467	6
		279	368	468	
		13	369	— у	
			378		
Total	715	1353	2548	2309	567

(b) 3

Unit 3

Section A

1. P = 3 units, Q = 6 units, R = 8 units Total length of P and $Q \longrightarrow 3 + 6$ = 9

9 - 8 = 1 unit Ans: (1)

2. S = 7 units
Difference between R and S \longrightarrow 8 - 7
= 1 unit
6 - 1 = 5 units

Longest bar: R → 8 units
 Shortest bar: P → 3 units
 Difference → 8 - 3
 = 5 units

Ans: (2)

Ans: (3)

- 4. Height of the taller tree \longrightarrow 3 × 2 = 6 m

 Difference \longrightarrow 6 2 = 4 m

 Ans: (2)
- 5. Length of Pencil A \longrightarrow 6 cm Length of Pencil B \longrightarrow 4 cm X \longrightarrow 6 + 4 = 10 cm Y \longrightarrow 6 - 4 = 2 cm

= 2 cmSum of X and Y \longrightarrow 10 + 2 = 12 cm

Ans: (4)

6. Total length of AB and AD \longrightarrow 4 + 3 = 7 cm

Length of BD \longrightarrow 7 - 1 = 6 cm

Difference \longrightarrow 10 - 6 = 4 cm

Ans: (2)

7. Length of BC → 10 ÷ 2
= 5 cm

Total length of all sides → BC + CD + BD
= 5 + 10 + 6

= 21 cm

Ans: (2)

8. Total length of all sides \longrightarrow AB + BD + AD = 4 + 6 + 3 = 13 cmDifference in length \longrightarrow 21 - 13 = 8 cmAns: (1)

- 9. KN = 24 14 = 10 m X = 24 + 26 = 50 m Y = 24 + 10 = 34 m X - Y = 50 - 34 = 16 m Ans: (3)
- 10. Jane: NK + KL = 10 + 24= 34 mKenneth: NL = 26 mDifference $\longrightarrow 34 - 26$ = 8 mAns: (1)

Section B

- 11. 24 cm less than 97 cm = 97 24 = 73 cm 73 – 59 = 14 cm The sum of 59 cm and 14 cm is equal to 24 cm less than 97 cm.
- String Q is longer than 65 cm, and the only length longer than 65 cm from the box is 73 cm.
 The length of String Q is 73 cm.
 Difference → 73 65
 = 8 cm

It is 8 cm longer than String P.

- The difference in length between 54 cm and 39 cm is 15 cm.
- 14. $A \longrightarrow 4 \text{ m}$ $C \longrightarrow 1 \text{ m}$ $B \longrightarrow 4 - 1$ = 3 m (B is shorter than A)Difference $\longrightarrow 3 - 1$ = 2 mB is 2 m longer than C.
- 15. $D \longrightarrow 3 \times 2$ = 6 m Difference $\longrightarrow 6 - 4$ = 2 m A is 2 m shorter than D.
- 16. Sum of B, C and D \longrightarrow 3 + 1 + 6 = 10 cm Difference \longrightarrow 10 - 4 = 6 m The sum of B, C and D is 6 m longer than A.

17. Length of Model House B \longrightarrow 16 – 10 → 10 - 6

Difference in length -

H = 4 cm

The length of Model House B is 4 cm shorter than that of Model House A.

18. Height of Model House A = 3 + 6 + 8= 17 cmDifference \longrightarrow 17 – 10

= 7 cm

The height of Model House A is 7 cm more than its length.

19. Difference → 225 – 108 = 117 cm

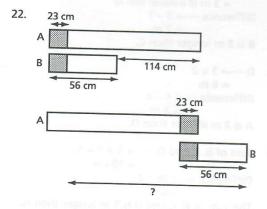
The head of the child from the top end of the door is 117 cm.

20. Difference between 45 m and 89 m → 89 - 45 = 44 m

 $44 \div 2 = 22 \text{ m}$ The difference between 45 m and 89 m is twice of 22 m.

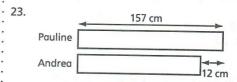
Section C

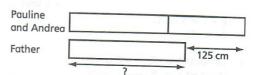
21. A \longrightarrow 54 m $B \longrightarrow 54 \div 2$ $= 27 \, \text{m}$ C → 129 – A – B = 129 - 54 - 27 = 48 mC − B → 48 − 27 $= 21 \, \text{m}$ B is 21 m shorter than C.



Length of Ribbon A \longrightarrow 114 + 56 = 170 cm

Length of Ribbon B \longrightarrow 56 cm Total length of joined ribbon \longrightarrow 170 + 56 - 23 - 23 = 180 cm The joined ribbon is 180 cm long.



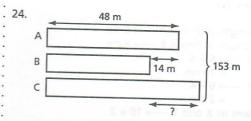


Pauline's height ---- 157 cm Andrea's height \rightarrow 157 – 12 = 145 cm

Pauline's and Andrea's height - \rightarrow 157 + 145 = 302 cmFather's height -→ 302 - 125

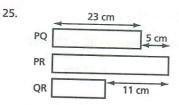
= 177 cm

Their father is 177 cm tall.



Height of Block A \longrightarrow 48 m Height of Block B → 48 - 14 $= 34 \, \text{m}$ Height of Block C \longrightarrow 153 – 48 – 34 $= 71 \, \text{m}$ Difference - \rightarrow 71 – 34 $= 37 \, \text{m}$

The difference in height between Block B and Block C is 37 m.



Length of PR \longrightarrow 23 + 5 = 28 cmLength of QR-→ 28 – 11 = 17 cm

Length of PQR
$$\longrightarrow$$
 PQ + QR
= 23 + 17
= 40 cm

PQR is longer.

Difference
$$\longrightarrow$$
 40 - 28 = 12 cm

POR is 12 cm longer.

Challenge Yourself!

The distance between the top of the tree and the flag is 738 m.

Continual Assessment 1

Section A

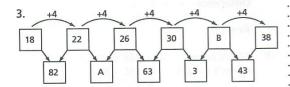
1. 47 tens and 7 ones \longrightarrow 470 + 7 = 477 999 - 477 = 522 Sum of digits in X \longrightarrow 5 + 2 + 2 = 9

Ans: (1)

2. Since the number is between 40 and 70, and the sum of its digits is 8, the number can be 44, 53 or 62.

Number	Difference o	fdigits
44	4 - 4 = 0	×
53	5 - 3 = 2	×
62	6 - 2 = 4	V

Ans: (3)



The first row of numbers is obtained by adding 4 to the previous number:

$$B \longrightarrow 30 + 4$$
$$= 34$$

The second row is obtained by taking the digits in the ones place and the tens place of the two numbers in the first row:

A
$$\longrightarrow$$
 22
Sum of A and B \longrightarrow 22 + 34
= 56

Ans: (4)

4. Value of the digit 5 in 475 = 5
Value of the digit 5 in 520 = 500
Difference → 500 - 5
= 495

Option (1): 41 tens and 95 ones = 410 + 95= 505×10^{-1}

Option (2): 42 tens and 75 ones = 420 + 75 = 495 \checkmark

Option (3): 25 ones less than 51 tens = 510-25 = 485 %

Option (4): 27 tens less than 755= 755 - 270 = 485 *

Ans: (2)

- Biggest possible number, A: 985
 Smallest possible number, B: 258
 Sum of digits in the tens place of A and of B
 8 + 5
 13
 Ans: (3)

- 8. Biggest 2-digit number: 99
 598 99 = 499
 Sum of digits → 4 + 9 + 9
 = 22
 Ans: (4)
- 9. Since 416 − 316 = 100, 416 − 317 = 99 Sum of missing digits → 1 + 3 + 7 = 11 Ans: (4)

Difference
$$\longrightarrow$$
 12 - 2
= 10

Ans: (3)

11. Since the number is between 350 and 620, and the digit in the tens place is 1 less than its digit in the hundreds place, the number cannot start with the digit 3.

Option	Number	Hundreds		Ones
		digit	digit	digit
(1)	326	3	3 - 1 = 2	3 + 4 = 7
(2)	362	3	3-1=2	3+4=7
(3)	438	4	4-1=3	4 + 4 = 8
(4)	483	4		4+4=8

Ans: (3)

$$Z \longrightarrow 256 + 560$$

Option (2): Sum of digits =
$$8 + 1 + 6$$

$$= 6 - 1$$

 $= 5 \checkmark$

Ans: (4)

15. AB
$$\longrightarrow$$
 12 cm
AE \longrightarrow 12 - 6
= 6 cm
BC \longrightarrow 6 - 2
= 4 cm
AB - BC \longrightarrow 12 - 4
= 8 cm
Ans: (3)

16.
$$AB + AE \longrightarrow 12 + 6$$

 $= 18 \text{ cm}$
 $CE \longrightarrow 18 - 5$
 $= 13 \text{ cm}$
 $CE - AE \longrightarrow 13 - 6$
 $= 7 \text{ cm}$

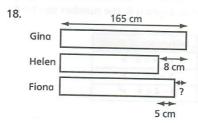
17.
$$CF = BC$$

= 4 cm
Sum of sides of ABCE \longrightarrow 12 + 4 + 13 + 6
= 35 cm

Sum of sides of CEF
$$\longrightarrow$$
 35 – 4 = 31 cm

$$EF \longrightarrow 31 - 13 - 4$$
$$= 14 \text{ cm}$$

Ans: (2)



Difference
$$\longrightarrow$$
 8 – 5
= 3 cm

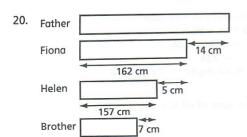
Ans: (3)

19. Gina's height
$$\longrightarrow$$
 165 cm
Helen's height \longrightarrow 165 - 8
= 157 cm

Fiona's height
$$\longrightarrow$$
 157 + 5
= 162 cm

Sum of Helen's + Fiona's height
$$\longrightarrow$$
 157 + 162
= 319 cm

Ans: (3)



Father's height
$$\longrightarrow$$
 162 + 14
= 176 cm
Brother's height \longrightarrow 157 - 7
= 150 cm
Difference \longrightarrow 176 - 150
= 26 cm
Ans: (3)

Section B

- Digit in the ones place: $5 + ? = 12 \longrightarrow ? = 7$ Digit in the tens place: $? + 8 = 12 \longrightarrow ? = 4$ 45 + 87 = 132
- 22. 18 tens and 18 ones \longrightarrow 180 +18 8 ones = 8198 + 8 = 206

206 = 20 tens and 6 ones

8 ones less than 20 tens and 6 ones is 18 tens and 18 ones.

- 23. The only pairs of numbers that have a difference of 3 are 5 and 2, and 9 and 6. Possible numbers: 652, 952, 296, 596 The number is 296.
- 24. Using guess and check

	Х	Y	Sum	Difference	
	6	0	6	6-0=6	
	5	1	6	5-1=4	V
Ī	4	2	6	4-2=2	

X is 5 and Y is 1.

25. 33 tens and 26 ones ---- 330 + 26 = 35627 tens and 58 ones --- 270 + 58 = 328

$$W \longrightarrow 356 - 328$$
$$= 28$$

= 2 tens and 8 ones

There are 2 tens and 8 ones in W.

26.

	23	
50	55	5
	32	

		17	andren
	80	88	8
•		71	141 5

The number in the middle is the sum of the numbers vertically or horizontally, i.e.

$$23 + 32 = 55$$

$$50 + 5 = 55$$

$$17 + 71 = 88$$

$$80 + 8 = 88$$

Furthermore, the digits of the vertical numbers are reversed, i.e. the digits of 23 are the reverse of that of 32, and the digits of 17 are the reverse of that of 71, while the digits in the tens and ones places of the left and right horizontal numbers respectively make up the number in the middle, i.e.

Digit in the tens place of 50 and digit in the ones place of $5 \longrightarrow 55$

Digit in the tens place of 80 and digit in the ones place of $8 \longrightarrow 88$

Hence, the number at the bottom has digits reversed to that of 43 \longrightarrow number is 34.

Number in the middle \longrightarrow 34 + 43

$$= 77$$

Horizontal numbers: 70 and 7



27. 5 + 3 = 85 - 3 = 2

The two possible numbers are 25 and 85. Sum of digits in the tens place \longrightarrow 2 + 8

The sum of the digits in the tens place in the two possible numbers is 10.

Digit in the ones place: $1 + ? = 6 \longrightarrow ? = 5$ Digit in the tens place: $3 + 8 = ? \longrightarrow ? = 11$ So, digit in the tens place = 1Digit in the hundreds place: $1 + ? = 2 \longrightarrow ? = 1$ Sum of digits $\longrightarrow 1 + 1 + 5$ = 7

The sum of the digits in the boxes is 7.

29. X has 23 ones ----- the digit in the tens place is

→ the digit in the tens place is 8

Difference of digit in the tens place - $\rightarrow 8-2$ = 6

The difference between the digits in the tens place in X and Y is 6.

- 30. The numbers are 3, 17 and 21.

 Sum of numbers → 3 + 17 + 21

 = 41
- 31. Length of Ribbon B \longrightarrow 293 58 = 235 cm
 Remaining length of Ribbon B \longrightarrow 235 48 = 187 cm
 The remaining length of Ribbon B is **187** cm.
- 32. Kumar's age now \longrightarrow 18 + 3

 = 21 years old

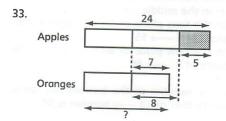
 Jenny's age now \longrightarrow 45 21

 = 24 years old

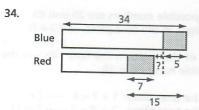
 Jenny's age in 5 years' time \longrightarrow 24 + 5

 = 29 years old

 Jenny will be 29 years old in 5 years' time.



Number of apples left \longrightarrow 24 – 5 = 19 Number of oranges left \longrightarrow 19 – 8 = 11 Number of oranges bought \longrightarrow 11 + 7 = 18 She bought 18 oranges.



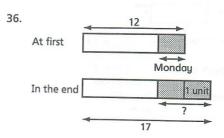
= 3

Number of red beads at first \longrightarrow 34 – 15 = 19 Number of red beads in the end \longrightarrow 19 + 7 = 26 Number of blue beads in the end \longrightarrow 34 – 5 = 29 Difference \longrightarrow 29 – 26

He had 3 more blue beads than red beads in the end.

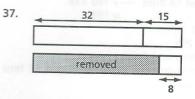
35. Smallest number: 306
56 tens = 560
S → 560 - 306
= 254
Sum of digits → 2 + 5 + 4

The sum of all the digits in S is 11.



1 unit
$$\longrightarrow$$
 17 - 12
= 5
2 units \longrightarrow 5 + 5
= 10

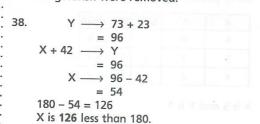
She bought 10 durians on Tuesday.



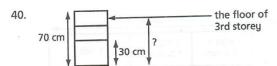
Total number of goldfish in the tank \longrightarrow 32 + 15 = 47

Number of goldfish removed \longrightarrow 47 - 8 = 39

39 goldfish were removed.



The greatest value of $-\bigcirc$ is 365.



Height of 2 storeys + 1st storey = 70 cm Height of 2 storeys = 70 - 30 = 40 cm

2 storeys \longrightarrow 40 cm 1 storey \longrightarrow 20 cm Height from the ground to the f

Height from the ground to the floor of the 3rd storey \longrightarrow 30 + 20 = 50 cm

The height from the ground to the floor of the 3rd storey is **50** cm.

Section C

41. Smallest possible numbers:

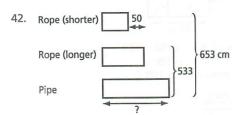
Number	Sum of digits	
250	2+5+0=7	
257	2 + 5 + 7 = 14	
258	2 + 5 + 8 = 15	1

Greatest possible numbers:

	Sum of digits	Number
1	8 + 7 + 5 = 20	875
v	8 + 7 + 2 = 17	872
1	8 + 7 + 0 = 15	870

Difference
$$\longrightarrow$$
 872 – 258
= 614

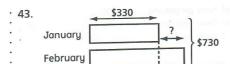
The difference between the two numbers is 614.



Length of shorter piece \longrightarrow 653 – 533 = 120 cm Length of longer piece \longrightarrow 120 + 50 = 170 cm Length of pipe \longrightarrow 533 – 170

= 363 cm

The length of the pipe is 363 cm.



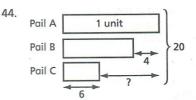
Amount of money saved in February

→ \$730 - \$330

= \$400

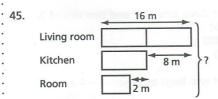
Difference → \$400 - \$330

= \$70 He saved **\$70** more in February than in January.



Pails A + B \longrightarrow 20 - 6 = 14 2 units \longrightarrow 14 + 4 = 18 1 unit \longrightarrow 9 Difference \longrightarrow 9 - 6 = 3

There were 3 more snails in Pail A than in Pail C.

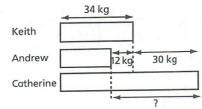


Length of kitchen \longrightarrow 16 – 8 = 8 m Length of room \longrightarrow 8 – 2 = 6 m Total length of house \longrightarrow 16 + 8 + 6 = 30 m

The total length of the house is 30 m.

Section A

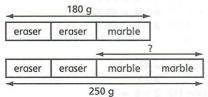
1. Mass of four potatoes \longrightarrow 500 + 500 = 1000 g Ans: (4) 16.



 \rightarrow 34 – 12 Andrew's mass = 22 kg \rightarrow 34 + 30 Catherine's mass = 64 kgDifference - \rightarrow 64 - 22

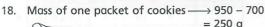
=42 kgCatherine is 42 kg heavier than Andrew.

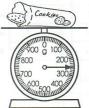
17.



Mass of one marble \longrightarrow 250 – 180 = 70 gMass of two marbles \rightarrow 70 + 70

= 140 gThe mass of two marbles is 140 g.





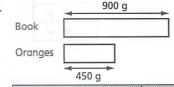
19. Mass of Z Mass of four tins of Y

$$= 8 \text{ kg}$$
Total mass $\longrightarrow 8 + 8$

$$= 16 \text{ kg}$$

The total mass of Z and four tins of Y is 16 kg.

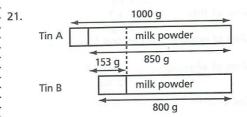
20.



Number of packets of oranges	Mass
1	450 g
2	450 + 450 = 900 g

A book is as heavy as 2 packets of oranges.

Section C

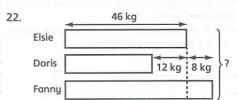


Mass of empty Tin A \longrightarrow 1000 – 850 = 150 g

Mass of milk powder in Tin B- \rightarrow 850 - 153 = 697 g

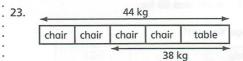
Mass of empty Tin B - \rightarrow 800 - 697 = 103 g

The mass of empty Tin B is 103 g.



Doris' mass \rightarrow 46 - 12 = 34 kgFanny's mass $\rightarrow 46 + 8$ = 54 kg \rightarrow 46 + 34 + 54 Total mass = 134 kg

The total mass of the three girls is 134 kg.



Mass of two chairs - \rightarrow 44 - 38

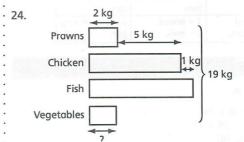
Mass of six chairs and a table

= Mass of two chairs + Mass of four chairs and a table

= 6 + 44

= 50 kg

The total mass of six chairs and a table is 50 kg.

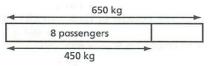


Mass of chicken
$$\longrightarrow$$
 2 + 5
= 7 kg
Mass of fish \longrightarrow 7 + 1
= 8 kg
Mass of prawns, chicken and fish \longrightarrow 2 + 7 + 8
= 17 kg

Mass of vegetables
$$\longrightarrow$$
 19 – 17
= 2 kg

Zoe bought 2 kg of vegetables.

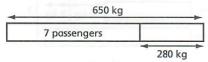
25. At first



In the end

After 1 passenger entered, there were (8 + 1 =) 9 passengers in the lift.

Then, 2 passengers left. So there were (9-2=) 7 passengers in the lift.



Mass of the 7 passengers \longrightarrow 650 – 280 = 370 kg

Mass of the 8 passengers \longrightarrow 450 kg Difference \longrightarrow 450 – 370 = 80 kg

The difference in mass between the passenger who entered the lift and the 2 passengers who left the lift was 80 kg.

Challenge Yourself!

Mandy	Nancy	Paul
2 × bread	2 × strawberry jam	2 × milk 3 × biscuits
1 × bread 1 × strawberry jam	1 × bread 1 × strawberry jam	2 × milk 3 × biscuits
1 × bread 3 × biscuits	1 × bread 1 × strawberry jam	2 × milk 1 × strawberry jam
1 × bread 2 × milk	1 × bread 1 × strawberry jam	3 × biscuits 1 × strawberry jam
1 × bread 3 × biscuits	1 × bread 2 × milk	2 × strawberry jam

Unit 5

Section A

1. 3 × 8 = 24 51 - 24 = 27 Ans: (4)

$$P \longrightarrow 2$$

$$Q \longrightarrow 7 + 2$$

$$= 9$$

$$P \times Q = 2 \times 9$$

$$= 18$$
Ans: (3)

- 3. 12 tens and 24 ones 11 tens and 10 ones = (120 + 24) – (110 + 10)
 - = 144 120

= 24

Option (1): $2 \times 8 = 16$ X

Option (2): 3 × 8 = 24 ✔

Option (4): $8 \times 8 = 64 \text{ } \text{x}$

Ans: (2)

- 4. Product = 45 24 = 21
 - Option (1): $2 \times 6 = 12 \text{ } \text{x}$

Option (2): $3 \times 7 = 21$

Option (3): $9 \times 2 = 18 \text{ } \text{x}$

Ans: (2)

Tens digit	Ones digit	Difference	Product	
2	6	6 - 2 = 4	2 × 6 = 12	
3	4	4-3=1	3 × 4 = 12	1
4	3	4-3=1	4 × 3 = 12	
6	2	6 - 2 = 4	6 × 2 = 12	11

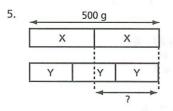
Possible numbers: 34 and 43
Sum of possible numbers \longrightarrow 34 + 43
= 77

Ans: (3)

6.	Tens digit divided by hundreds digit	Ones digit
(1)	2 ÷ 1 = 2	2 🗸
(2)	2 ÷ 2 = 1	2 X
(3)	6 ÷ 2 = 3	3 🗸
(4)	8 ÷ 2 = 4	4 🗸

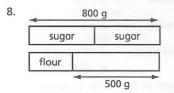
Ans: (2)

- 2. Mass of two potatoes \longrightarrow 500 g Mass of two apples + two potatoes \longrightarrow 750 g Mass of two apples \longrightarrow 750 – 500 = 250 gDifference → 500 - 250 = 250 gAns: (2)
- 3. Mass of two apples + four potatoes —→ 250 + 1000 = 1250 gAns: (1)
- 4. 1 tin of X \longrightarrow 100 + 100 + 50 = 250 g2 tins of X \longrightarrow 250 + 250 = 500 gAns: (2)



3 tins of Y - 1 tin of X = 1 tin of XAns: (2)

- 6. Mass of three tins of Y and two tins of X \rightarrow 500 + 500 = 1000 gAns: (4)
- 7. Mass of two bags of sugar \longrightarrow 400 + 400 Ans: (4)

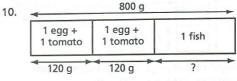


Mass of a bag of flour \longrightarrow 800 - 500 = 300 g

Ans: (3)

9. Mass of one apple and three strawberries \rightarrow 150 + 90 = 240 g240 g 240 g 1 apple + 1 apple + 3 strawberries 3 strawberries

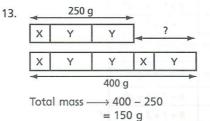
Mass of two apples + six strawberries \rightarrow 240 + 240 = 480 gAns: (3)



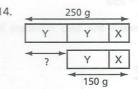
Mass of two eggs and two tomatoes \rightarrow 120 + 120 = 240 gMass of 1 fish — \rightarrow 800 - 240 = 560 gAns: (2)

Section B

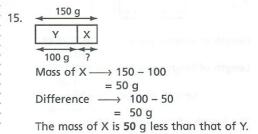
- 11. Mass of one potato \longrightarrow 150 g 150 - 70 = 80 gMass of one potato \longrightarrow 70 g + 80 g
- 12. Mass of one durian \longrightarrow 850 g Mass of three potatoes \longrightarrow 150 + 150 + 150 = 450 gA durian is heavier than three potatoes.



The total mass of \bigwedge and



Mass of Y \longrightarrow 250 – 150 = 100 gThe mass of Y is 100 g.

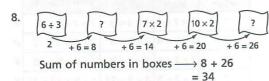


7. Product of the digits in the hundreds and tens : 12. places → 36 ÷ 2 : 18

Hundreds digit	Tens digit	Product	Number
2	9	2 × 9 = 18	292 🗸
3	6	$3 \times 6 = 18$	362 X
6	3	6 × 3 = 18	632 X
9	2	9 × 2 = 18	922 X

Product of the digits in the tens and ones places $\longrightarrow 9\times 2$

= 18 Option (1): 25 - 19 = 6 XOption (2): 8 + 4 = 12 XOption (3): $3 \times 6 = 18 \text{ V}$ Option (4): 12 + 17 = 29 XAns: (3)



Ans: (3)

Ans: (4)

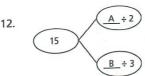
	Number	Divided by 3	Sum of digits	
(1)	18	18 ÷ 3 = 6	1 + 8 = 9	×
(2)	21	21 ÷ 3 = 7	2 + 1 = 3	×
(3)	24	24 ÷ 3 = 8	2 + 4 = 6	X
(4)	27	27 ÷ 3 = 9	2 + 7 = 9	V

Ans: (4)

Section B

Left side of number sentence	Right side of number sentence
8 × 2 = 16	24 - 8 = 16 X
8 × 3 = 24	32 − 8 = 24 🗸
8 × 8 = 64	72 - 8 = 64 X

$$8 \times 3 = 32 - 8$$



A must be divisible by 2 and B must be divisible by 3.

by 3. 15 = 1 + 14 X = 2 + 13 X = 3 + 12 X = 4 + 11 X = 5 + 10 X = 6 + 9 V = 7 + 8 X

6 is divisible by 2 and 9 is divisible by 3.

 $6 \times 2 = 12$ $9 \times 3 = 27$

The pair of numbers is 12 and 27.

Difference \longrightarrow 450 - 253 = 197

The difference between the result and 450 is 197.

14. Twice the value of the digit in the ones place
= 2 × 4
= 8

Multiplying 3 to this result \longrightarrow 3 × 8 = 24

Sum of digits \longrightarrow 2 + 4 = 6

The sum of its digits is 6.

15. M \longrightarrow 24 ÷ 3 = 8 N \longrightarrow 24 ÷ 2 = 12 M ÷ 2 \longrightarrow 8 ÷ 2 = 4

 $\begin{array}{c}
N \div 2 \longrightarrow 12 \div 2 \\
= 6
\end{array}$

Sum of results \longrightarrow 4 + 6 = 10

The sum of their results is 10.

16. $1 \times 3 = 3$

 $2 \times 3 = 6$ X

3 × 3 = 9 ×

 $4 \times 3 = 12$ **X**

 $5 \times 3 = 15$ X

 $6 \times 3 = 18$ X

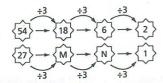
7 × 3 = 21 ✓

The digits in the boxes are 7 and 2.

 $7 \times 2 = 14$

The result when the digits in the boxes are multiplied is 14.

17.



$$M \longrightarrow 27 \div 3$$

$$= 9$$

$$N \longrightarrow 9 \div 3$$

$$= 3$$
Sum of M and N $\longrightarrow 9 \div 3$

Sum of M and N
$$\longrightarrow$$
 9 + 3 = 12

$$9 \times 2 = 18$$
Difference $\longrightarrow 18 - 12$
 $= 6$

When the sum of M and N is subtracted from the result of 9×2 , the answer is **6**.

18. Count in twos: 2, 4, (6) 8, 10, 12, 14, 16, (8), 20, 22, (24) ...

Count in threes: 3, (6), 9, 12, 15, (8), 21, (24) ...

The biggest possible number is 24, and the smallest possible number is 6.

Sum of numbers — 24 + 6

19. Number of chairs
$$\longrightarrow$$
 9 × 3
= 27
Difference \longrightarrow 27 - 9
= 18

There are 18 more chairs than tables.

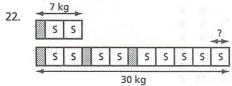
Possible number of pears: 26, 27, 28 and 29.
 The only number that can be divided by 3 is 27 (27 ÷ 3 = 9).
 There are 9 packets of pears.

Section C

21. Length of ribbon used for the presents $\longrightarrow 4 \times 3$ = 12 m

Length of the remaining piece of ribbon → 24 - 12 = 12 m

The length of the remaining piece of ribbon is 12 m.



Mass of three bags and six suitcases → 7 × 3 = 21 kg

Mass of three suitcases
$$\longrightarrow$$
 30 - 21
= 9 kg
Mass of one suitcase \longrightarrow 9 ÷ 3
= 3 kg
The mass of one suitcase is 3 kg.

23. Amount of money spent on food and transport everyday= \$2 + \$3

$$= $2 + $3$$

 $= 5

1 week =
$$$5 \times 7 = $35$$

Pocket money each week
$$\longrightarrow$$
 \$35 + \$15

Pocket money in two weeks
$$\longrightarrow$$
 \$50 \times 2 = \$100

She receives \$100 in two weeks.

24. The hundreds digit can only be 1, 2, 3 or 4.

Hundreds digit	Tens digit	Ones digit	Sum of digits	
1	1 × 2 = 2	$1 \times 3 = 3$	1+2+3=6	×
2	$2 \times 2 = 4$	$2 \times 3 = 6$	2 + 4 + 6 = 12	~
3	$3 \times 2 = 6$	$3 \times 3 = 9$	3 + 6 + 9 = 18	×
4	$4 \times 2 = 8$	4 × 3 = 12	4 + 8 + 12 = 24	×

The number is 246.

25. Total amount of orange juice \longrightarrow 2 × 4

Total amount of liquid
$$\longrightarrow$$
 8 + 22 = 30 *l*

Number of bottles needed
$$\longrightarrow$$
 30 ÷ 3 = 10

10 bottles are needed to contain the diluted orange juice.

Challenge Yourself!

$$4 \times 5 + 3 \times 5 + 4 \times 3 - 3 \times 4 + 3 \times 5 + 4 \times 3 + 3 \times 3$$

= 71

Semestral Assessment 1

Section A

1. $12 \times 3 = 36$

$$98 - 82 = 16$$

$$? = 36 - 16$$

Option (2):
$$10 \times 2 = 20 \checkmark$$

Option (3):
$$20 \div 2 = 10 \text{ } \text{x}$$

Ans: (3)

2.
$$X \longrightarrow 15 \text{ tens} - 97$$

= 150 - 97
= 53

$$53 \times 2 = 106$$

Option (1): 8 tens and 26 ones =
$$80 + 26$$

= $106 \checkmark$

Option (2): 4 less than
$$120 = 120 - 4$$

= 116 **X**

Option (3): 10 tens and 16 ones =
$$100 + 16$$

= 116%

3. Mass of two metal bars
$$\longrightarrow$$
 9 × 2
= 18 kg

Mass of
$$\stackrel{\frown}{B}$$
 \longrightarrow 63 - 18

Mass of two
$$\boxed{B} \longrightarrow 45 \times 2$$

= 90 kg

Option (2):
$$24 \div 3 = 8$$

Option (3):
$$24 \div 2 = 12$$

 $4 \times 4 = 16 \text{ }\text{x}$

Option (4):
$$24 \div 3 = 8$$

 $4 \times 5 = 20 \text{ }\text{x}$

$$6 \div 2 = 3$$

$$6 \div 3 = 2$$

$$3 - 2 = 1 X$$

$$12 \div 2 = 6$$

$$12 \div 3 = 4$$

 $6 - 4 = 2$

6.
$$P \longrightarrow 4 \text{ cm}$$

 $Q \longrightarrow 5 \text{ cm}$

$$R \longrightarrow 6 \text{ cm}$$

Option (1): $R + Q = 6 + 5$

$$2 \times P = 2 \times 4$$

Option (2):
$$P + R = 4 + 6$$

= 10 cm

Option (3):
$$P + Q = 4 + 5$$

$$2 \times R = 2 \times 6$$

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Option (4):
$$Q + P = 5 + 4$$

= 9 cm
 $2 \times R = 2 \times 6$
= 12 cm *

R:
$$6 \div 2 = 3$$

Number of 2-cm rods =
$$2 + 3$$

= 5

Difference
$$\longrightarrow$$
 12 – 8
= 4

9. Number of marbles per child
$$\longrightarrow$$
 36 ÷ 3 = 12

Number of beads per child
$$\longrightarrow$$
 27 \div 3 = 9

10. Numbers divisible by 2 are even numbers. By elimination, only Option (4) has no even numbers:

$$\begin{array}{c|c}
15 \div 3 = 5 \\
21 \div 3 = 7
\end{array}$$
 Can be divided by 3

$$9 \div 3 = 3$$

11. Two groups of $8 \longrightarrow 2 \times 8$ = 16

Six groups of 3
$$\longrightarrow$$
 6 \times 3 = 18

$$X \longrightarrow 18 - 16$$

$$5 \times X \longrightarrow 5 \times 2$$
$$= 10$$

12. $3 \times 6 = 18$

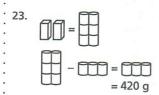
Option (1):
$$2 \times 9 = 18$$

Option (2): 10 more than
$$7 = 10 + 7$$

Ans: (2)

- 13. Mrs Lee will require 28 or more kilograms of . Section B sugar for baking cakes. Count in threes: 3, 6, 9, 12, 15, 18, 21, 27, 30 ... · Mrs Lee will require 30 kg of sugar for baking cakes. $30 \div 3 = 10$ Ans: (3)
- 14. Mass of one book \longrightarrow 100 g Mass of one apple \longrightarrow 50 g Mass of two apples \longrightarrow 50 \times 2 = 100 gAns: (1)
- 15. Mass of two books \longrightarrow 100 \times 2 = 200 gMass of three apples \longrightarrow 50 \times 3 = 150 qDifference → 200 - 150 = 50 gAns: (1)
- 16. Distance between A and B \longrightarrow 570 234 = 336 mDistance between A and C \longrightarrow 832 – 234 = 598 mDifference → 598 - 336 = 262 mAns: (2)
- 17. Total distance travelled → 336 + 598 Ans: (4)
- 18. Length of ribbon cut into 4-m pieces $\longrightarrow 9 \times 4$ $= 36 \, \text{m}$ Length of remaining ribbon \longrightarrow 36 + 5 = 41 m Total length of ribbon - \rightarrow 41 + 32 = 73 mAns: (4)
- 19. Number of balloons in four packets \longrightarrow 4 \times 12 = 48 Number of balloons in the remaining two packets $\longrightarrow 2 \times 8$ = 16 Total number of balloons \longrightarrow 48 + 16 = 64 Ans: (2)
- 20. Number of pupils in each row \longrightarrow 27 ÷ 3 Number of pupils in the 2nd row \longrightarrow 9 - 2 Ans: (4)

- - $\rightarrow 9 \times 2$ = 18 $B \longrightarrow 2 \times 2$ = 4 Sum of A and B- \rightarrow 18 + 4 = 22The sum of A and B is 22.
- = 24 $24 \div 2 = 12$ $12 \times 3 = 36$ When Z is divided by 2, it gives the same result as 36 divided by 3.



22. $Z \longrightarrow 8 \times 3$

The mass of Milia is **420** g more than Diana.

- Total mass of three and - \rightarrow 420 + 420 = 840 gThe total mass of three and is 840 g.
- 25. Since the 3-digit numbers must be between 305 and 595, the digit in the hundreds place can only be 4. The numbers are 402, 407, 420, 427, 470 and 472.

Sum of the greatest and the smallest possible numbers

$$= 402 + 472$$

= 874

The sum of the greatest and smallest possible numbers is **874**.

26. Digit in the ones place: 7 + 4 = ? → ? = 11

So, the digit in the ones place is 1.

Digit in the tens place: 14 - ? = 6 → ? = 8

Digit in the hundreds place: ? - 8 - 1 = 0

→ ? = 9

The 3 digits are 9, 1 and 8. The smallest possible number is 189.

> = 10 Total number of cookies \longrightarrow 12 + 10 = 22

He had 22 cookies at first.

28. The longest object is the rose which is 7 cm long.

Length of two erasers \longrightarrow 2 × 2 cm = 4 cm

Difference
$$\longrightarrow$$
 7 – 4
= 3 cm

The longest object is 3 cm longer than the length of two erasers.

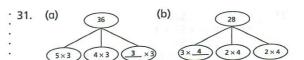
29. Item 1 (× 2) Item 2 Total length

Rose: $7 \times 2 = 14$ Eroser: $2 \text{ cm} \ 14 + 2 = 16 \text{ cm}$ Pencil: $6 \times 2 = 12 \text{ cm}$ Eroser: $2 \text{ cm} \ 12 + 2 = 14 \text{ cm}$ Rose: $7 \times 2 = 14 \text{ cm}$ Pencil: $6 \text{ cm} \ 14 + 6 = 20 \text{ cm}$

A 14-cm ribbon is as long as the length of two pencils and one eraser.

30. Total original length \longrightarrow 15 + 3
= 18 cm
Total length now \longrightarrow 6 + 2
= 8 cm
Difference \longrightarrow 18 - 8

= 10 cm Their total length is 10 cm shorter than their original length after they are being used.



32. Three groups of $5 \longrightarrow 3 \times 5$ = 15 Four groups of $2 \longrightarrow 4 \times 2$ = 8

 $Sum \longrightarrow 15 + 8$ = 23

Two groups of $8 \longrightarrow 2 \times 8$

$$= 16$$
Difference \longrightarrow 23 – 16
$$= 7$$

The sum of three groups of 5 and four groups of 2 is 7 more than two groups of 8.

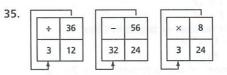
33. Total number of beads \longrightarrow 3 × 6 = 18 Number of packets \longrightarrow 18 ÷ 9

Number of packets \longrightarrow 18 ÷ = 2

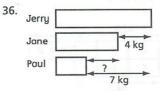
There are 2 packets of beads.

34. Since each animal has two eyes, the number of animals is (20 ÷ 2 =)10.
 Number of rabbits → 10 − 8

There are 8 rabbit legs altogether.



 $36 \div 3 = 12$ 56 - 32 = 24 $8 \times 3 = 24$



Difference \longrightarrow 7 – 4 = 3 kg

Paul is 3 kg lighter than Jane.

37.
$$\times 3$$
 (200 g \longrightarrow \$2 $\times 3$ = \$6

Amount spent on prawns
$$\longrightarrow$$
 \$6 × 4
= \$24
×8 (\$3 \longrightarrow 100 g
\$24 \longrightarrow 100 × 8
= 800 g

She bought 800 g of prawns.

38. Benjamin's height 5 years ago → 167 – 12 = 155 cm Danny's height now → 155 + 5 = 160 cm

Danny is 160 cm tall now.

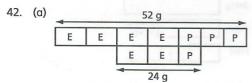
- 40. In a week, Fiona reads (2 1) = 1 more book during the weekend than during the weekdays. In three weeks, she reads (1 × 3) = 3 more books during the weekends than during the weekdays.

Section C

41.
$$4 \times 3 = 12$$

 $7 \times 2 = 14$
Total number of pupils in Class 2A
 \longrightarrow 12 + 14
= 26
Number of pupils present \longrightarrow 26 - 2
= 24
Number of groups of 4 \longrightarrow 24 ÷ 4

There were 6 groups of 4.



Mass of two erasers and two paperclips

→ 52 – 24

= 28 g

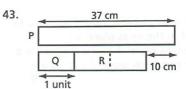
Mass of an eraser and a paperclip \longrightarrow 28 ÷ 2 = 14 q

The mass of an eraser and a paperclip is **14** g.

(b) Mass of three erasers and three paperclips

 → 28 + 14
 = 42 g
 The mass of three erasers and three

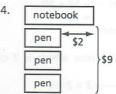
The mass of three erasers and three paperclips is **42** g.



Total length of strings Q and R

= 18 cm String R is 18 cm long. Difference \longrightarrow 37 - 18

= 19 cm String P is **19** cm longer than String R.



Cost of each pen
$$\longrightarrow$$
 \$9 ÷ 3
= \$3
Cost of notebook \longrightarrow \$3 + \$2
= \$5

Total cost
$$\longrightarrow$$
 \$5 + \$9 = \$14

She paid \$14 for the notebook and pens altogether.

45. Since the number is between 300 and 400, the digit in the hundreds place can only be 3. Numbers that can be divided by 3: 3, 6 and 9

By guess and check

Number	Sum of digits	
303	3 + 0 + 3 = 6	×
363	3 + 6 + 3 = 12	×
393	3 + 9 + 3 = 15	×
369	3 + 6 + 9 = 18	~
396	3 + 9 + 6 = 18	V

The two possible numbers are 369 and 396. Difference \longrightarrow 396 – 369

The difference is 27.

Unit 6

Section A

1. Since $5 \times 5 = 25$. $\Rightarrow = 5$.

$$\langle 1 \rangle$$
 ÷ 5 = 8 $\longrightarrow \langle 1 \rangle$ = 5 × 8

Option (1): 25 + 10 = 35 ✔

Option (2): $5 \times 7 = 35$

Option (3): 40 - 5 = 35 ✔

Option (4): $50 \div 10 = 5$ **X**

Ans: (4)

- 2. $36 \div 4 = 9$ 37 - 9 = 28 $28 \div 7 = 4$ $32 \div 4 = 8$ Ans: (3)
- 3. The value of the digit 4 in 346 is 40.
 40 ÷ 5 = 8
 8 × 3 = 24
 X is 24.
 - X = 24. 2 + 4 = 6Ans: (2)

ŀ.	24	6	4
	8	2	4
	3	3	1

In every column, the top number is divided by the centre number to obtain the bottom number:

$$24 \div 8 = 3$$

 $6 \div 2 = 3$

$$\begin{array}{cccc}
6 \div 2 &= 3 \\
4 \div 4 &= 1
\end{array}$$

0	8	5
10	2	\Diamond
4	4	1

- 5. $P \longrightarrow 2 \times 4$ = 8 $Q \longrightarrow 6 + 4$ = 10 $P \times Q = 8 \times 10$ Ans: (3)
- 6. $4 \times 9 = 36$ $\Rightarrow = 36 - 12$ = 24 $24 \div 6 = 4$ Ans: (3)
- 7. Count in fours: 4, 8, 12, 16, 20, 24, 28, 32, 36...

 Count in nines: 9, 18, 27, 36...

 The number is 36.

 36 ÷ 4 = 9

 36 9 = 27

$$36 \div 4 = 9$$

 $36 - 9 = 27$
Ans: (3)

8.
$$6 \times 3 = 18$$

 $9 \times 4 = 36$
 $18 + 36 = 54$
 \implies $= 54 - 26$
 $= 28$
Sum of digits, $X \longrightarrow 2 +$
 $= 10$

Difference
$$\longrightarrow$$
 28 – 10
= 18

9. Since Z is a result of subtracting a 2-digit number from 60 (i.e. at least 10), Z must be 50 or less.

Option (4):
$$30 + 16 = 46$$

 $4 \times 6 = 24$

= 6 × 6 Since only the 1-digit numbers can be used, the possible 2-digit numbers are 49, 66 and 94. 94 is the greatest possible number. Ans: (3)

Section B

 Left side of the number sentence: Since the number can be divided by 2, it is an even number, and the digit in the ones place can only be 0. Hence, the number can either be 10 or 50.

Right side of the number sentence: Since the number can be divided by 5, the digit in the ones place can either be 0 or 5. Hence, the number can either be 20 or 25.

By guess and check

Left side of number sentence	Right side of number sentence	
10 ÷ 2 = 5	20 ÷ 5 = 4	١
10 ÷ 2 = 5	25 ÷ 5 = 5	1
50 ÷ 2 = 25	20 ÷ 5 = 4	1
50 ÷ 2 = 25	25 ÷ 5 = 5	

12. By guess and check

A	4×A	3×A	Sum	200000
1	4 × 1 = 4	3×1=3	4+3=7	
2	4 × 2 = 8	3×2=6	8 + 6 = 14	
3	$4 \times 3 = 12$	$3 \times 3 = 9$	12 + 9 = 21	1
4	$4 \times 4 = 16$	$3 \times 4 = 12$	16 + 12 = 28	,
5	$4 \times 5 = 20$	3 × 5 = 15	20 + 15 = 35	

В	6×B	3 × B	Sum	
1	6×1=6	3×1=3	6+3=9	×
2	6 × 2 = 12	3 × 2 = 6	12 + 6 = 18	- x
3	$6 \times 3 = 18$	3 × 3 = 9	18 + 9 = 27	-

$$A = 5, B = 3$$

 $A + B = 5 + 3$
 $= 8$

The sum of A and B is 8.

- 13. Count in fours: 4, 8, 12, 16 20, 24, 28 ... Count in fives: 5, 10, 15, 20, 25 ... There are **20** marbles in the bag.
- 14. Since 45 can be divided by the must

be 5. Hence,
$$(5 - 1 =) 4$$
.

The sum of tand is 9.

15. 18

The top number is the sum of the two numbers below it.

$$A + 18 \longrightarrow 7 \times 3$$
$$= 21$$

$$A \longrightarrow 21 - 18$$

$$= 3$$

$$12 + 24 \longrightarrow 4 \times B$$

$$4 \times B \longrightarrow 36$$

$$B \longrightarrow 36 \div 4$$

$$\longrightarrow$$
 36 ÷ 4 = 9

$$\begin{array}{ccc} & = & 9 \\ 1 & + & B & \longrightarrow & 3 + 9 \end{array}$$

= 12 The sum of A and B is 12.

16.
$$24 \div 3 = 8$$

$$9 \times 2 = 18$$

$$35 \div 5 = 7$$

$$11 \times 3 = 33$$

Greatest number: 33 Smallest number: 7

$$33 + 7 = 40$$

Z is 40.

$$32 \div 4 = 8$$

$$8 \times 4 = 59 - 27$$

18. Number of good apples \longrightarrow 43 – 3

= 40
Number of bags Jane will have
$$\longrightarrow$$
 40 ÷ 4

Number of bags Raymond will have

$$\longrightarrow$$
 40 ÷ 5 = 8

Difference
$$\longrightarrow$$
 10 – 8

Jane will have 2 more bags of apples than Raymond.

19. 1 less than the hundreds digit \longrightarrow 4 – 1

$$? \div 2 = 3$$

$$? = 3 \times 2$$

The tens digit is 6.

The number is 462.

20.



The two numbers at the top are multiplied to obtain the number at the bottom:

$$3 \times 2 = 6$$

$$6 \times X = 18 \longrightarrow X = 3$$

$$3 \times Y = 27 \longrightarrow Y = 9$$

$$Y \times X = 3 \times 9$$

Section C

21. Cost of one paper file
$$\longrightarrow$$
 \$4 \div 2 = \$2

Cost of ten paper files
$$\longrightarrow$$
 \$2 × 10

Difference
$$\longrightarrow$$
 \$20 - \$17 = \$3

She needs another \$3 so that she can buy another ten paper files.

22. Cost of three pens \longrightarrow \$2 \times 3

Cost of five exercise books \longrightarrow \$4 × 5

Total cost
$$\longrightarrow$$
 \$20 + \$6
= \$26

Cost after discount
$$\longrightarrow$$
 \$26 - \$5
= \$21

She pays \$21 altogether.

23. Number of apples needed to last for 10 days

$$\rightarrow$$
 2 × 10

Difference
$$\longrightarrow$$
 20 – 15
= 5 apples

Number of oranges need to last for 10 days

$$\longrightarrow 1 \times 10$$

$$= 10$$
Difference $\longrightarrow 10 - 9$

She needs to buy another **5** apples and **1** orange to last for ten days.

24. Amount of money collected by Benny

$$\longrightarrow$$
 \$20 - \$4

Total amount of money collected

Amount of money each club received

Amount of money received by the Arts Club and the Chess Club \longrightarrow \$12 \times 2 = \$24

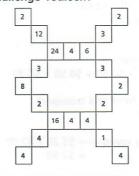
The Arts Club and the Chess Club received \$12 altogether.

25.

Number of cups of coffee	Cost	Number of cups of tea	Cost	Total
2	2 × \$4 = \$8	9	9 × \$3 = \$27	\$8 + \$27 = \$35 ×
3	3 × \$4 = \$12	8	8 × \$3 = \$24	\$12 + \$24 = \$36 ×
4	4 × \$4 = \$16	7	7 × \$3 = \$21	\$16 + \$21 = \$37 ✔

He sold 4 cups of coffee.

Challenge Yourself!



Unit 7

Section A

1. Amount of money Julie has

$$\longrightarrow$$
 (\$5 × 2) + \$1 + (\$0.20 × 2) + (\$0.10 × 3)

$$= $10 + $1 + $0.40 + $0.30$$

Option (1): \$12 - \$0.30 = \$11.70 ✔

Ans: (2)

2. Amount of money Wei Chien has

$$\longrightarrow$$
 (\$10 + \$10) + (\$5 + \$5) + \$2 + \$0.50 +

$$(\$0.10 + \$0.10) + \$0.05$$

$$= $20 + $10 + $2.50 + $0.20 + $0.05$$

Option (1): \$32.15 is less than \$32.75.

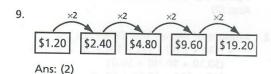
Option (2): \$32.55 is less than \$32.75.

Option (3): \$32.70 is less than \$32.75.

Option (4): \$32.85 is more than \$32.75.

Ans: (4)

Ans: (2)



10. Option (1):
$$$10 + $2 + $2 + $0.50 + $0.10 + $0.05$$

= $$14.65 \checkmark$
Option (2): $$5 + $5 + $2 + $2 + $0.20 + $0.20 + $0.20 + $0.45 \checkmark$

Option (3):
$$$10 + $2 + $2 + $0.20 + $0.20 + $0.10 + $0.05 = $14.55 \text{ } \text{M}$$
Option (4): $$10 + $1 + $1 + $1 + $1 + $0.20 + $0.20 + $0.20 + $0.20 + $0.30 = $14.65 \text{ } \text{M}$
Ans: (3)

Section B

The value of the missing number in the box is 22.

- 12. The item that has a price closest to \$16 is the bottle of lotion that costs \$15.90. She can buy a bottle of lotion.
- 13. Total cost of all the items → \$5.90 + \$9.90 + \$3.50 + \$15.90 + \$6.50 + \$7.90 = \$49.60 Difference -→ \$49.60 - \$16 = \$33.60

She needs another \$33.60.

14. Amount of change received - \rightarrow \$100 - \$49.60 = \$50.40

She will receive \$50.40.

16. Value of Jenny's one-dollar coins, fifty-cent and twenty-cent coins \rightarrow (\$1 \times 20) + (\$0.50 \times 8) + (\$0.20 \times 30) = \$20 + \$4 + \$6

= \$30 Value of Jenny's ten-cent coins → \$32.50 – \$30 = \$2.50

 $$2.50 \longrightarrow 25$ ten-cent coins She had 25 ten-cent coins.

17. Amount of money saved on Wednesday → \$0.20 + \$0.20 + \$0.20 + \$0.20 + \$0.20 + \$0.20 + \$0.20 + \$0.20 + \$0.20 + \$0.10 + \$0.10 + \$0.10 + \$0.10 + \$0.10 + \$0.10 + \$0.10 + \$0.10 = \$2.60

Amount of money saved on Tuesday \rightarrow \$0.20 + \$0.20 + \$0.20 + \$0.20 + \$0.20 + \$0.10 + \$0.10 + \$0.10 + \$0.10 + \$0.10 + \$0.10 + \$0.10 = \$1.70 Difference → \$2.60 - \$1.70 = \$0.90

She saved \$0.90 more on Wednesday than on Tuesday.

18. Cost of five oranges \longrightarrow \$0.30 + \$0.30 + \$0.30 + \$0.30 + \$0.30 = \$1.50 Cost of three apples- \rightarrow \$0.40 + \$0.40 + \$0.40 = \$1.20 Difference → \$1.50 - \$1.20 = \$0.30

Five oranges cost \$0.30 more than three apples.

19.
$$$15 \div 2 = $7.50$$

By guess and check

Number of oranges	Cost of oranges
10	\$0.30 × 10 = \$3
20	\$0.30 × 20 = \$6
25	\$0.30 × 25 = \$7.50

She should buy 25 oranges.

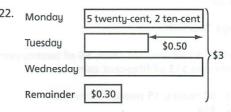
20. Cost of ten apples
$$\longrightarrow$$
 \$0.40 × 10
= \$4
Cost of five oranges \longrightarrow \$0.30 × 5
= \$1.50
Total cost \longrightarrow \$4 + \$1.50
= \$5.50
Difference \longrightarrow \$5.50 - \$3
= \$2.50

He needs \$2.50 more.

· Section C 21. \$4.90 **Biscuits** Sardines Fruit juice

> Cost of a can of sardines \longrightarrow \$4.90 + \$0.50 = \$5.40 Cost of a bottle of fruit juice \longrightarrow \$5.40 - \$3 = \$2.40

The bottle of fruit juice costs \$2.40.



Amount spent on Monday \rightarrow \$0.20 + \$0.20 + \$0.20 + \$0.20 + \$0.20 + \$0.10 + \$0.10 = \$1.20 Amount spent on Tuesday → \$1.20 - \$0.50

= \$0.70 Total amount spent on Monday and Tuesday \longrightarrow \$1.20 + \$0.70 = \$1.90

Amount spent on Wednesday → \$3 - \$0.30 - \$1.90 = \$0.80 He spent \$0.80 on Wednesday.

Penny \$95 Raymond 1 unit \$15

Susan

\$95 - \$15 = \$80 4 units ----> \$80 1 unit ----> \$80 ÷ 4 = \$20

Raymond saves \$20.

She would receive \$9.70.

24. Total cost of items →\$12.90 + \$34.50 + \$22.90 = \$70.30 \rightarrow \$50 + \$10 + \$10 + \$10 Total amount paid -= \$80 → \$80 - \$70.30 Change received = \$9.70

25. Number of fifty-cent stamps left
$$\longrightarrow$$
 3 - 1
= 2
Number of five-cent stamps left \longrightarrow 4 - 2
= 2

Value of fifty-cent stamps
$$\longrightarrow$$
 \$0.50 + \$0.50 = \$1

Value of five-cent stamps
$$\longrightarrow$$
 \$0.05 + \$0.05 = \$0.10

Total value of stamps
$$\longrightarrow$$
 \$1 + \$1.20 + \$0.10
= \$2.30

The total value of the remaining stamps was \$2.30.

Challenge Yourself!

- 1. He has \$3 of ten-cent coins, \$6 of twenty-cent coins and \$15 of fifty-cent coins.
- (a) 50 apples; 15 pears; 70 oranges
 (b) \$78

Unit 8

Section A

Number of shaded squares → 3
 Total number of squares → 11 + 1
 = 12
 Number of unshaded squares → 12 - 3
 = 9
 Fraction of unshaded figure → 9
 12
 Ans: (4)

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

 $\frac{3}{4} + \frac{1}{4} = 1$
Ans: (4)

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

Sum = 2 + 5
= 7
Ans: (3)

4. Option (1):
$$\frac{4}{5} + \frac{1}{5} = \frac{5}{5}$$

 $5 - 5 = 0 \text{ } \text{x}$
Option (2): $\frac{2}{8} + \frac{5}{8} = \frac{7}{8}$
 $8 - 7 = 1 \text{ } \text{x}$

Option (3):
$$\frac{3}{7} + \frac{3}{7} = \frac{6}{7}$$

 $7 - 6 = 1$
Option (4): $\frac{3}{12} + \frac{8}{12} = \frac{11}{12}$
 $12 - 11 = 1$
Ans: (1)

5.
$$\frac{1}{2}$$
, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{4}{5}$, $\frac{5}{6}$

P = 4, Q = 5, R = 6

Sum of Q and R \longrightarrow 5 + 6

= 11

Difference \longrightarrow 11 - 4

= 7

Ans: (3)

6. Option (1):
$$\frac{1}{8} + \frac{3}{8} = \frac{4}{8}$$

 $8 = 4 \times 2$
Option (2): $\frac{2}{10} + \frac{3}{10} = \frac{5}{10}$
 $10 = 5 \times 2$
Option (3): $\frac{3}{6} - \frac{1}{6} = \frac{2}{6}$
 $6 = 2 \times 3$
Option (4): $\frac{3}{12} - \frac{2}{12} = \frac{6}{12}$
 $12 = 6 \times 2$

7. Smallest fraction:
$$\frac{1}{6}$$

Greatest fraction: $\frac{5}{6}$

Difference between the greatest and smallest fractions = $\frac{5}{6} - \frac{1}{6}$

Ans: (3)

8.
$$M \longrightarrow 4-2$$

 $= 2$
 $N \longrightarrow 4$
 $M \times N \longrightarrow 2 \times 4$
 $= 8$
Ans: (4)

Ans: (3)

9. Fraction of the rectangle that is shaded
$$\longrightarrow \frac{4}{12}$$
Option (1): $\frac{4}{12} = \frac{4}{12}$
Option (2): $\frac{4}{11}$ is greater than $\frac{4}{12}$.
Option (3): $\frac{4}{10}$ is greater than $\frac{4}{12}$.

Option (4): $\frac{4}{9}$ is greater than $\frac{4}{12}$. Ans: (1)

10. Fraction of the triangle that is shaded $\longrightarrow \frac{2}{9}$

Option (1): $\frac{2}{9}$ is greater than $\frac{2}{11}$.

Option (2): $\frac{2}{9}$ is smaller than $\frac{2}{7}$.

Option (3): $\frac{2}{9}$ is smaller than $\frac{2}{5}$.

Option (4): $\frac{2}{9}$ is smaller than $\frac{2}{3}$. Ans: (1)

Section B

Divide the rectangles into 8 equal parts as shown in the figure below. Since ⁵/₈ of the region is to be unshaded, 3 rectangles must be shaded. Shade any 2 small rectangles.



- 12. 4 of $\frac{1}{8}$ + 2 of $\frac{1}{4}$ = 1 6 of $\frac{1}{12}$ = $\frac{1}{2}$ and 3 of $\frac{1}{6}$ = $\frac{1}{2}$
- 13. Since 3 parts make up $\frac{3}{8}$ of the figure, the complete figure has 8 parts.



In order to shade $\frac{1}{4}$ of this figure, it has to be divided into 4 equal parts first:



Shade 1 of the 4 parts.



14. Smallest = $\frac{3}{9}$, Greatest = $\frac{3}{6}$

To represent the smallest fraction, $\frac{3}{9}$

Draw 9 equal squares and shade any 3 of them.



15. $X \longrightarrow 1 - \frac{2}{12}$ $= \frac{10}{12}$

 $= \frac{10}{12}$ $Y \longrightarrow \frac{8}{12} - \frac{2}{12}$ 6

Difference $\longrightarrow \frac{10}{12} - \frac{6}{12}$ = $\frac{4}{12}$

The difference between X and Y is $\frac{4}{12}$.

16. $1 - \frac{2}{5} = \frac{3}{5}$ $\frac{3}{5} - \frac{1}{5} = \frac{2}{5}$

The fraction is $\frac{2}{5}$.

17. Number of shaded triangles \longrightarrow 3 + 4
= 7
Number of unshaded triangles \longrightarrow 2 + 2
= 4
Total number of triangles \longrightarrow 7 + 4
= 11

The shaded triangles are equivalent to $\frac{7}{11}$ of the figure.

18. Divide the figure into 12 equal parts and shade any 5 parts.



Number of squares left after 3 squares were removed → 9 − 5

= 4Number of squares at first $\longrightarrow 4 + 3$

Fraction of shaded figure $\longrightarrow \frac{4}{7}$

The fraction was $\frac{4}{7}$.

20. Denominator of $Z \longrightarrow 7$ Numerator of $Z \longrightarrow 7 - 4$

Z is
$$\frac{3}{7}$$
.

$$\frac{?}{7} + \frac{2}{7} = \frac{3}{7}$$

$$\frac{?}{7} = \frac{1}{7}$$

Sum
$$\longrightarrow 1 + 7$$

The sum of the denominator and the numerator of the missing fraction is 8.

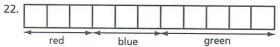
Section C

21. Total number of pieces of cake \longrightarrow 2 + 3 + 4 + 3 = 12

Number of pieces eaten
$$\longrightarrow$$
 2 + 3 + 4
= 9

Fraction of the cake that was eaten $\longrightarrow \frac{9}{12}$

 $\frac{9}{12}$ of the cake was eaten.



Fraction of red and blue beads $\longrightarrow 1 - \frac{5}{11}$

$$=\frac{6}{11}$$

Fraction of red beads $\longrightarrow \frac{3}{11}$

 $\frac{3}{11}$ of the beads in the bottle is red.

23. Number of pieces of remaining ribbon \longrightarrow 20 ÷ 2

$$\longrightarrow$$
 20 ÷ 2 = 10

Number of ribbons at first \longrightarrow 10 + 2 = 12

Fraction of ribbon used $\longrightarrow \frac{2}{12}$

The fraction of ribbon used to make scrapbooks

is
$$\frac{2}{12}$$
.

24. A fruit juice fruit juice water

B fruit juice

2 units + 3 units = 5 units Total number of units \longrightarrow 3 + 3 Fraction of fruit juice in the mixture = $\frac{5}{6}$

The fraction of fruit juice in the mixture is $\frac{5}{6}$.

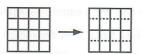
25. At first



In the end

Since squares are added to the figure, the total number of squares in the final figure cannot be 8 or less than 12.

By adding 4 more squares to the figure, we have 16 squares, which can be divided into 8 equal parts.



Shade any 3 parts. By comparison, 2 shaded squares and 2 unshaded squares have been added to the original figure.



There are 16 squares in the final figure.

Challenge Yourself!

Solution 1:

1	2	3
4	5	6
7	8	

Solution 2:

1	2	3
4	5	6
7	8	9
10	11	12

Solution 3:

1	2	3
4	5	6
7	8	9
10	11	12

Continual Assessment 2

Section A

- 1. 4 two-dollar notes \longrightarrow 4 × \$2
 - 3 one-dollar coins \longrightarrow 3 x \$1
 - 5 twenty-cent coins make \$1.
 - 6 twenty-cent coins make \$1.20.
 - Amount of money \longrightarrow \$8 + \$3 + \$1.20 = \$12.20
 - Option (1): \$11 + \$1.20 = \$12.20 V
 - Option (2): \$15 \$2.80 = \$12.20 ✔
 - Option (3): \$24.50 \$13.30 = \$11.20 X
 - Option (4): \$50 − \$37.80 = \$12.20 ✓
 - Ans: (3)



- Shaded region \longrightarrow
- Unshaded region $\longrightarrow 1 \frac{1}{4}$

Ans: (4)

- 3. $9 \times 7 = 63$
 - 63 39 = 24
 - 8 × A = 24

The missing number in the box is 3. Ans: (1)

- 4. Value of fifty-cent coins:
- $\times 10$ (2 fifty-cent coins make \$1. 20 fifty-cent coins make (\$1 × 10) = \$10
 - 22 fifty-cent coins make \$11.
 - 24 fifty-cent coins make \$12.
 - 26 fifty-cent coins make \$13.
 - 28 fifty-cent coins make \$14.
 - Value of ten-cent coins:
- $\times 10$ (10 ten-cent coins make \$1. 100 ten-cent coins make (\$1 \times 10) = \$10
 - 200 ten-cent coins make (\$10 + \$10) = \$20
 - 210 ten-cent coins make (\$20 + \$1) = \$21
 - Value of twenty-cent coins \longrightarrow \$21 \$14
 - = \$7
 - \$1 ---- 5 twenty-cent coins
 - \rightarrow 5 × 7
 - = 35 twenty-cent coins
 - Difference → 35 28

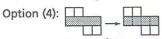
Ans: (2)

- $\frac{7}{8} \frac{3}{8} = \frac{4}{8}$
 - Option (1): 6 out of 8 triangles are shaded

$$\longrightarrow \frac{6}{8} \times$$

- Option (2): None of the parts are equal or shaded. X
- Option (3): 3 out of 8 squares are shaded

$$\longrightarrow \frac{3}{8} \times$$



4 out of 8 squares are shaded

$$\longrightarrow \frac{4}{8} \checkmark$$

Ans: (4)

6. $\triangle + \triangle + \triangle = 15$

$$\times \diamondsuit = 5 \times 7$$

7. Cost of each bottle \longrightarrow \$40 ÷ 8

Difference in the number of bottles bought

$$\longrightarrow 5 - 3$$
= 2

Difference in cost \longrightarrow 2 × \$5

Ans: (2)

8. $1-\frac{3}{7}=\frac{4}{7}$

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

The missing fraction is $\frac{3}{7}$.

Option (1):
$$\frac{3}{7} + \frac{4}{7} = 1$$

- Option (2): $\frac{3}{7} \frac{1}{7} = \frac{2}{7}$
- Option (3): $\frac{6}{7} \frac{3}{7} = \frac{3}{7}$
- Option (4): $\frac{3}{7} \longrightarrow 2$ out of 7 parts are

unshaded X

Ans: (4)

9. Cost of one curry puff
$$\longrightarrow$$
 \$1.20 ÷ 2
= \$0.60
Cost of six curry puffs \longrightarrow \$0.60 × 6
= \$3.60

Total cost
$$\longrightarrow$$
 \$3.60 + \$2.50 = \$6.10

Amount of change received

$$\longrightarrow$$
 (\$5 × 2) - \$6.10
= \$10 - \$6.10

= \$3.90 Ans: (4)

10. Option (1):
$$\frac{11}{12} - \frac{3}{12} = \frac{8}{12}$$

$$1 - \frac{8}{12} = \frac{4}{12} X$$

Option (2):
$$\frac{7}{8} - \frac{3}{8} = \frac{4}{8}$$

$$1-\frac{4}{8}=\frac{4}{8}\checkmark$$

Option (3):
$$\frac{3}{6} - \frac{1}{6} = \frac{2}{6}$$

$$1 - \frac{2}{6} = \frac{4}{6} x$$

Option (4):
$$\frac{4}{7} - \frac{3}{7} = \frac{1}{7}$$

$$1 - \frac{1}{7} = \frac{6}{7} X$$

Ans: (2)

Number of unshaded triangles in the end \rightarrow 10 – 4 = 6

Total number of triangles in the end $\rightarrow 4 + 6$ = 10

Fraction of shaded figure $\longrightarrow \frac{4}{10}$ Ans: (3)

Number of pieces leftover \longrightarrow 8 - 7 = 1

Fraction of cake left $\longrightarrow \frac{1}{8}$ Ans: (1)

13. Amount spent in 11 days
$$\longrightarrow$$
 11 \times \$5 = \$55

Amount saved in 1 day \longrightarrow \$8 - \$5 = \$3

Amount saved in 11 days
$$\longrightarrow$$
 11 x \$3

Difference
$$\longrightarrow$$
 \$55 - \$33 = \$22

Ans: (1)

14. Cost of one cup of coffee
$$\longrightarrow$$
 \$9 ÷ 3

Cost of one cup of orange juice
$$\longrightarrow$$
 \$7 ÷ 2
= \$3.50

Difference in cost between one cup of coffee and one cup of orange juice

Difference in cost between four cups of coffee and four cups of orange juice

$$\longrightarrow \$0.50 \times 4$$
$$= \$2$$

Ans: (2)

15.
$$\frac{5}{6} - \frac{1}{6} = \frac{4}{6}$$

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

Difference
$$\longrightarrow$$
 6 – 2

Ans: (4)

16.
$$\frac{7}{7} \frac{6}{6} \frac{5}{5} \frac{4}{4} \frac{3}{3}$$

$$\frac{N}{M} = \frac{3}{11}$$

$$1 - \frac{3}{11} = \frac{8}{11}$$

Ans: (2)

17. Value of 3 five-dollar notes
$$\longrightarrow$$
 \$5 \times 3

Value of 7 fifty-dollar notes
$$\longrightarrow$$
 \$50 × 7

Total value \longrightarrow \$350 + \$15 = \$365

$$Y = $480 - $365$$

Ans: (1)

18.
$$\frac{7}{8} - \frac{2}{8} = \frac{5}{8}$$

Fraction
$$\longrightarrow \frac{5}{8} - \frac{4}{8}$$

Ans: (1)

Cost of two dolls
$$\longrightarrow$$
 \$30 \times 2
= \$60
Difference \longrightarrow \$83.70 - \$60
= \$23.70

Ans: (2)

20. Option (1):
$$$10 + $5 + ($2 \times 4) + $0.50 + ($0.10 + $0.10) + $0.05$$

= $$10 + $5 + $8 + $0.50 + $0.20 + 0.05
= $$23.75 \times$

Option (3):
$$\$10 + (\$5 \times 2) + (\$2 \times 3) + \$0.50 + \$0.20 + \$0.05$$

= $\$10 + \$10 + \$6 + \0.75
= $\$26.75 \checkmark$

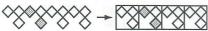
Option (4):
$$(\$10 \times 2) + \$5 + (\$1 \times 2) + (\$0.20 + \$0.20) + \$0.05$$

= $\$20 + \$5 + \$2 + \$0.40 + \$0.05$
= $\$27.45 \%$

Ans: (3)

Section B

21. Divide the figure into 4 equal parts.



Shade 1 square such that the figure is $\frac{1}{4}$ shaded,

i.e. $\frac{3}{4}$ unshaded.



Α	4×A	8×A	Sum	
1	4 × 1 = 4	8 × 1 = 8	4 + 8 = 12	×
2	4 × 2 = 8	8 × 2 = 16	8 + 16 = 24	X
3	4 × 3 = 12	$8 \times 3 = 24$	12 + 24 = 36	~

В	2×B	3×8	Sum	
1	2 × 1 = 2	$3 \times 1 = 3$	2 + 3 = 5	×
2	2 × 2 = 4	3 × 2 = 6	4+6=10	×
3	2 × 3 = 6	3×3=9	6 + 9 = 15	×
4	2 × 4 = 8	3 × 4 = 12	8 + 12 = 20	×
5	2 × 5 = 10	3 × 5 = 15	10 + 15 = 25	~

$$A = 3, B = 5$$

 $A + B = 3 + 5$

= 8

The sum of A and B is 8.

Value of 4 fifty-dollar notes
$$\longrightarrow$$
 \$50 \times = \$200

Value of 5 two-dollar notes
$$\longrightarrow$$
 \$2 × 5
= \$10

\$1 ---- 1 one-dollar coin

$$$8 \longrightarrow 8$$
 one-dollar coins

The result has the same value as 4 fifty-dollar notes, 5 two-dollar notes and 8 one-dollar coins.

24. Original numerator
$$\longrightarrow 3-2$$

Original denominator
$$\longrightarrow$$
 7 + 5

Fraction
$$\longrightarrow \frac{1}{12}$$

$$1 - \frac{1}{12} = \frac{11}{12}$$

When the fraction is subtracted from 1 whole, the result is $\frac{11}{12}$.

25. Add 7 more triangles to get the complete figure.



Divide the figure into 5 equal parts.



Shade $\frac{4}{5}$ of it.



26. Amount spent on Tuesday \longrightarrow \$10 - \$2 = \$8

Total amount spent
$$\longrightarrow$$
 \$10 + \$8 + \$11 = \$29

Amount saved
$$\longrightarrow$$
 \$50 - \$29
= \$21

He saved \$21.

27. Smallest fraction $\longrightarrow \frac{1}{12}$

Second greatest fraction =
$$\frac{4}{12}$$

Difference
$$\longrightarrow \frac{4}{12} - \frac{1}{12}$$

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

Shade any 3 parts of the figure.



28. Cost of two television sets \longrightarrow \$599 + \$599 \cdot 33. 45 ÷ 5 = 9

Cost of four chairs
$$\longrightarrow$$
 \$50 × 4
= \$200

Difference
$$\longrightarrow$$
 \$1198 - \$200
= \$998

The difference is \$998.

29. Cost of one television set and four chairs → \$599 + \$200

Amount saved after five weeks
$$\longrightarrow$$
 \$120 \times 5 = \$600

She will need \$199 more.

30. M \longrightarrow 1 - $\frac{3}{12}$

$$=\frac{9}{12}$$

$$N \longrightarrow \frac{11}{12} - \frac{9}{12}$$

$$=\frac{2}{12}$$

$$M + N \longrightarrow \frac{9}{12} + \frac{2}{12}$$

The sum of M and N is $\frac{11}{12}$.

31. $25 \div 5 = 5$

Cost of 25 apples
$$\longrightarrow$$
 5 × \$2

Cost of pineapples
$$\longrightarrow$$
 3 × \$8

Total cost
$$\longrightarrow$$
 \$10 + \$24
= \$34

Amount of money left
$$\longrightarrow$$
 \$38 - \$34
= \$4

She had \$4 left.

32. Number of pieces of cake eaten by Lily and $Joan \longrightarrow 2 + 4$

Number of pieces of cake eaten by Henry

$$\rightarrow 6 - 6$$

Total pieces of cake \longrightarrow 6 + 4 + 2

Fraction eaten by Henry $\longrightarrow \frac{4}{12}$

Henry ate $\frac{4}{12}$ of the cake.

 $4 \times 3 = 12$

$$100 \div 10 = 10$$

$$5 \times 4 = 20$$

Greatest number \longrightarrow 20 Smallest number \longrightarrow 9

Difference
$$\longrightarrow$$
 20 – 9
= 11

The difference between the greatest and smallest numbers is 11.

34. At first: $\frac{3}{2}$

In the end:
$$\frac{3}{4}$$

Since the numerator does not change, the total number of squares at first is obtained by adding 5 to the denominator:

Total number of squares at first
$$\longrightarrow$$
 5 + 4 = 9

Fraction of shaded figure
$$\longrightarrow \frac{3}{9}$$

Fraction of unshaded figure
$$\longrightarrow 1 - \frac{3}{9}$$

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

The fraction of the unshaded figure at first was

35. Difference → \$450 - \$270

They will each receive \$60 less if only \$270 is shared among them.

$$=\frac{5}{10}$$

$$Y \longrightarrow 1 - \frac{1}{9}$$

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

Sum of numerators \longrightarrow 5 + 8 = 13

The sum of the numerators of X and Y is 13.

37. Smallest fraction $\longrightarrow \frac{2}{9}$

$$X \longrightarrow 1 - \frac{2}{9}$$

$$=\frac{7}{9}$$

Sum
$$\longrightarrow$$
 7 + 9

The sum of the numerator and denominator of

38. Cost of watch
$$\longrightarrow$$
 \$152 - \$89 = \$63

Cost of two blouses and watch

$$\longrightarrow$$
 (\$50 + \$50) + \$63
= \$100 + \$63

= \$13 She will need \$13 more.

39. Amount of money left
$$\longrightarrow$$
 \$105 - \$53 = \$52

Amount left after buying one bag

$$\longrightarrow $52 - $26$$
$$= $26$$

Amount left after buying another bag

She can buy 2 bags.

$$\longrightarrow$$
 \$32 + \$26 + \$53 = \$111

She needs \$6 more.

Section C

45 twenty-cent coins
$$\longrightarrow$$
 \$1 \times 9

20 ten-cent coins
$$\longrightarrow$$
 \$1 × 2

$$\longrightarrow$$
 \$9 + \$2 + \$0.40 = \$11.40

Value of fifty-cent coins
$$\longrightarrow$$
 \$31.40 - \$11.40

$$$20 \longrightarrow 2 \times 20$$

Difference
$$\longrightarrow$$
 40 – 24

She has 16 more fifty-cent coins than ten-cent coins.

42. Number of yellow beads
$$\longrightarrow 2 \times 2$$

Number of blue beads \longrightarrow 12 – 2 – 4

Fraction of yellow beads $\longrightarrow \frac{4}{12}$

Fraction of blue beads $\longrightarrow \frac{6}{12}$

Difference
$$\longrightarrow \frac{6}{12} - \frac{4}{12}$$

The difference is $\frac{2}{12}$.

43. Fraction of money spent $\longrightarrow 1 - \frac{5}{11}$

$$=\frac{6}{11}$$

On the particular day

Fraction of money saved
$$\longrightarrow \frac{5}{11} + \frac{2}{11}$$

$$=\frac{7}{11}$$

Fraction of money spent
$$\longrightarrow 1 - \frac{7}{11}$$

$$=\frac{4}{11}$$

Difference
$$\longrightarrow \frac{7}{11} - \frac{4}{11}$$

$$=\frac{3}{11}$$

He saved $\frac{3}{11}$ more than he spent on that day.

44. Cost of 3 boxes of pencils → \$46 - \$31 = \$15

Cost of 1 box of pencils
$$\longrightarrow$$
 \$15 ÷ 3

$$= $5$$
Cost of 2 boxes of pencils $\longrightarrow 5×2

Cost of 1 box of pens
$$\longrightarrow$$
 \$10 - \$1

$$= :$$
Total cost \longrightarrow \$9 + \$15

He pays \$24 for one box of pens and three boxes of pencils.

45. Amount of money Mrs Gan had

$$\longrightarrow $50 + ($10 \times 4)$$

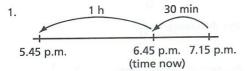
Cost of 3 kg of prawns
$$\longrightarrow$$
 \$20 \times 3

Cost of 5 kg of chicken
$$\longrightarrow$$
 \$30 + \$5

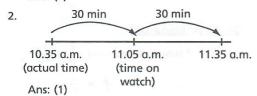
5 kg of chicken cost \$35.

Unit 9

Section A

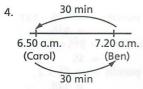


Ans: (3)



3. 1 h 10.30 p.m. 11.30 p.m.

> Option (1): 10.30 Option (2): 9.30 Option (3): 11.30 Option (4): 12 o'clock Ans: (1)

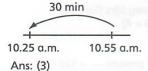


Ans: (1)

5. Time taken by the car \longrightarrow 1 h - 30 min = 30 min

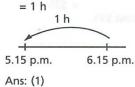
The car will reach Town B 30 minutes before the lorry.

5 min before 11 a.m. \longrightarrow 10.55 a.m.



6. Total time taken for piano practice

→ 30 min + 30 min



 The clock shows 7.05. Since Derrick goes to school in the morning, he leaves his house at 7.05 a.m.

Option (1): 5 minutes after 7 a.m.

---> 7.05 a.m. ✓

Option (2): 5 minutes before 8 a.m.

—→ 7.55 p.m. **X**

Option (3): 25 minutes to 2 a.m.

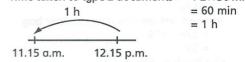
—→ 1.35 a.m. **X**

Option (4): 35 minutes after 1 p.m.

----- 1.35 p.m. **✗**

Ans: (1)

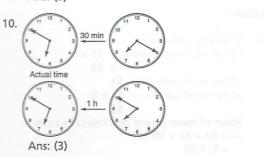
8. Time taken to type 2 documents \longrightarrow 2 × 30 min



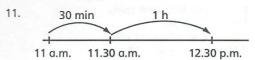
Ans: (1)



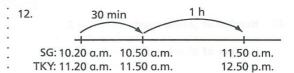
Ans: (3)



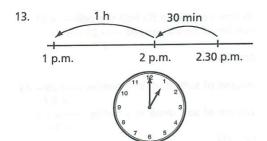
Section B



She will be back from lunch at 12.30 p.m.



The time in Tokyo 1 hour later will be 12.50 p.m.



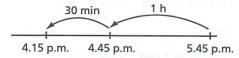
14. Time taken today \longrightarrow 30 min 30 min

6.55 a.m.

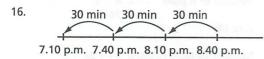
7.25 a.m.

He finished exercising at 7.25 a.m.

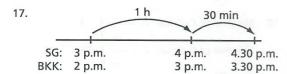
15. The clock shows 5.45 p.m.



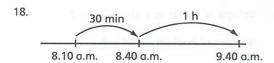
She started taking her nap at 4.15 p.m.



She started fixing the puzzles at 7.10 p.m.



His friend stops writing the e-mail at 3.30 p.m., according to Bangkok time.

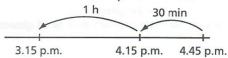


She arrived at her destination at 9.40 a.m.

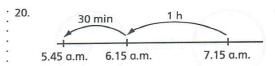
19. Time taken to do homework
 → 30 min + 30 min
 = 60 min

= 60 n= 1 h

The clock shows 4.45 p.m.



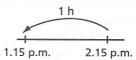
She started doing her homework at 3.15 p.m.



He woke up at 5.45 a.m.

Section C

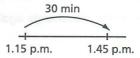
21. The clock shows 2.15 p.m.



Andrew started walking home from school at 1.15 p.m.

1 h - 30 min = 30 min

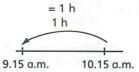
It will take him 30 minutes if he takes the bus.



Andrew would reach home at 1.45 p.m. if he takes the bus.



22. Time taken \longrightarrow 30 min + 30 min = 60 min = 1 h

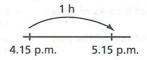


Mr Tan started driving at 9.15 a.m.



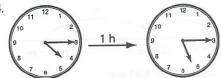
23. Time taken by Shirley \longrightarrow 30 min + 30 min = 60 min = 1 h

15 minutes past 4 p.m. \longrightarrow 4.15 p.m.



She finished her homework at 5.15 p.m.

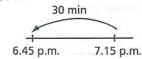
24.



Time taken for return journey

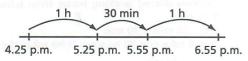
→ 1 h - 30 min

= 30 min



She boarded the taxi at 6.45 p.m.

25.



The bus will reach the interchange again at 6.55 p.m.

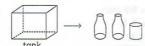
Challenge Yourself!

- 1. (a) 4.55 p.m.
 - (b) No, 5 minutes faster

Unit 10

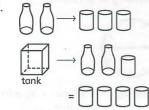
Section A

1.



2 tanks \longrightarrow (2 bottles + 1 can) \times 2 = 4 bottles + 2 cans Ans: (4)

2.



Ans: (1)

3. Volume of 3 cups of water \longrightarrow 3 × 1 l = 3 l Volume of 6 tanks of water \longrightarrow 6 × 3 l = 18 l Volume of half of the pail \longrightarrow 3 + 18 = 21 l Volume of pail \longrightarrow 2 × 21 = 42 l Ans: (3)

- 4. Volume needed to fill half the pail \longrightarrow 21 lNumber of tanks needed \longrightarrow 21 ÷ 3 = 7
 - Ans: (3)
- 5. Volume of soft drink in 2 bottles \longrightarrow 29 23 = 6 lVolume of soft drink in 1 bottle \longrightarrow 6 ÷ 2 = 3 lAns: (1)
- 6. Volume of 1 tank \longrightarrow 22 13 = 9 lVolume of 2 tanks \longrightarrow 9 × 2 = 18 lAns: (4)
- 7. Volume of 2 cups \longrightarrow 17 13 = 4 lVolume of 1 cup \longrightarrow 4 ÷ 2 = 2 lAns: (1)
- 8. Volume of 1 pail \longrightarrow 2 × 2 = 4 lVolume of 6 pails \longrightarrow 4 × 6 = 24 lAns: (4)
- 9. Number of pails needed \longrightarrow 24 ÷ 2 = 12 Ans: (4)
- 10. Volume of Cylinder A \longrightarrow 3 ÷ 3 = 1 lVolume of Cylinder C \longrightarrow 1 × 5 = 5 lAns: (1)

Section B

- 11. Volume of water in 1 jug \longrightarrow 8 ÷ 2 = 4 lNumber of beakers \longrightarrow 4 ÷ 2 = 2 The water from 1 jug can fill 2 beakers.
- 12. Number of beakers \longrightarrow 8 ÷ 2 = 4 The water from 1 cylinder can fill 4 beakers.
- 13. 1 cup \longrightarrow 3 glasses 8 cups \longrightarrow 8 \times 3 = 24 glasses 8 cups can hold as much milk as **24** glasses.

14. 1 flask
$$\longrightarrow$$
 5 glasses
4 flasks \longrightarrow 5 × 4
= 20 glasses
 \div 5 (20 glasses \longrightarrow 10 l
4 glasses \longrightarrow 10 \div 5
= 2 l

If the volume of 4 flasks is 10 l, the volume of 2 cylinders is 2 l.

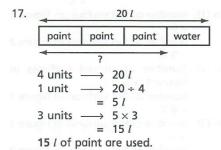
15. 4 glasses
$$\longrightarrow$$
 2 cylinders
= 2 l
1 glass \longrightarrow 2 ÷ 4
= 0.5 l
1 cup \longrightarrow 3 glasses
= 3 × 0.5
= 1.5 l
2 cups \longrightarrow 1.5 × 2
= 3 l

Volume of 2 cylinders and 2 cups \longrightarrow 2 + 3 = 5 l

2 cylinders and 2 cups contain 5 $\it l$ of milk.

16.
$$\times 3$$
 $\binom{2 \text{ mugs} \longrightarrow 4 l}{6 \text{ mugs} \longrightarrow 4 \times 3}$
= 12 l
Volume of 2 tanks \longrightarrow 12 \times 2
= 24 l

2 tanks can hold 24 l of water.



18.
$$+2$$
 $\begin{pmatrix} 4 \text{ cups} & \longrightarrow & 2 \text{ glasses} \\ 2 \text{ cups} & \longrightarrow & 2 \div & 2 \\ & = & 1 \text{ glass} \\ 1 \text{ jug} & \longrightarrow & 2 \text{ cups} + 1 \text{ glass} \\ & = & 1 + 1 \\ & = & 2 \text{ glasses} \end{pmatrix}$

A jug can hold as much water as 2 glasses.

19.
$$\times 3$$
 (2 cups \longrightarrow 1 glass
6 cups \longrightarrow 1 \times 3
= 3 glasses
3 glasses \longrightarrow 1 pail
= 6 l

The volume of 6 cups is 6 l.

20.
$${}_{+3}\begin{pmatrix} 3 \text{ glasses} \longrightarrow 6 \ l \\ 1 \text{ glass} & \longrightarrow 6 \div 3 \\ = 2 \ l \end{pmatrix}$$

$$+ \bigcirc + \bigcirc + \bigcirc = 2 + 6 + 2 + 2 = 12 \ l$$

Section C

21. Volume of 2 tins of milk powder
$$\longrightarrow$$
 2 × 2 = 4 l

$$\times 3$$

$$\begin{pmatrix} 8 \text{ packets} \longrightarrow 2 \text{ tins} \\ = 4 l \\ 24 \text{ packets} \longrightarrow 4 \times 3 \\ = 12 l \end{pmatrix}$$

Volume of 3 tins and 24 packets \longrightarrow 3 × 2 + 12 = 6 + 12

The volume of the mixture is 18 l.

90 - 80 = 10 l 10 l of water must be poured from the big tank to the small tank.

23. Number of glasses of pineapple juice in 5 jugs \longrightarrow 2 × 5 = 10

Number of glasses of watermelon juice in 5 jugs \longrightarrow 3 \times 5 = 15

Difference
$$\longrightarrow$$
 15 – 10 = 5

There were 5 more glasses of watermelon juice than pineapple juice.

24. Volume of water that leaked in 1 hour
$$\longrightarrow$$
 25 - 20 = 5 l

Volume of water that leaked in 4 hours $\longrightarrow 5 \times 4$

= 20
$$l$$

Volume of water left \longrightarrow 25 – 20
= 5 l

There were 5 $\it l$ of water in the tank after 4 hours.

25. (a) +2 4 bottles \longrightarrow 6 l2 bottles \longrightarrow 6 ÷ 2 = 3 l

The volume of 2 bottles of Packaging A is 3 *L*.

(b) 1 bottle of A → 2 bottles of B 8 bottles of A → 2 × 8 = 16 bottles of B Difference → 16 - 8 = 8

I can get 8 more bottles of Packaging B.

Challenge Yourself!

- (a) $\frac{1}{4}$
- (b) $\frac{3}{4}$, 5 more minutes

Unit 11

Section A

- - Number of curved lines in Figure 2 \longrightarrow 3

 Difference \longrightarrow 12 3
 = 9

Ans: (2)

2. ⟨ → □

Figure 3 can be made by 3 rectangles and 4 quarter circles.

3 + 4 = 7Ans: (1)

Number of curved and straight lines in Figure 3
 1 + 12
 13

Number of curved and straight lines in Figure 1 \longrightarrow 2 + 5

= 7Diference \longrightarrow 13 - 7 = 6

Ans: (4)

4. $\triangle \Box \triangle \Diamond \Box \Diamond \Diamond$

Figure A consists of 2 quarter circles. Option (1): 4-2 = 2 squares Option (2): $18 \div 9 = 2$ quarter circles Option (3): $2 \times 2 = 4$ quarter circles Option (4): 1+2 = 3 triangles Ans: (2)

- 5. Figure B looks like $\stackrel{\triangle}{\sum}$.
 Ans: (1)
- 6. Number of straight lines in Figure B \longrightarrow 8

 Number of curved lines in Figure A \longrightarrow 2

 Difference \longrightarrow 8 2

 = 6

Ans: (2)

Number of flat surfaces → 3
 Number of curved surfaces → 2

Difference \longrightarrow 3 – 2

Ans: (1)

8. Number of flat surfaces → 6
 Number of curved surfaces → 3
 Number of flat surfaces = 5 + 4

Number of flat surfaces = 5 + 4

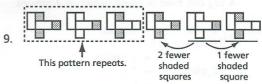
= 9

- Option (1): Number of flat surfaces in Figure 1 = 6 Number of flat surfaces in Figure 2 = 9 *
- Option (2): Number of curved surfaces in Figure 1 = 3

 Number of flat surfaces in Figure 1 = 6 *
- Option (3): Number of flat surfaces in Figure 1 = 6 Number of flat surfaces in Figure 3 = 3 **X**
- Option (4): Number of curved surfaces in Figure 1 = 3

 Number of flat surfaces in Figure 3
 = 3
 ✓

Ans: (4)



Ans: (2)

 Option (1): Each square or rectangle can only be cut up into 2 triangles, i.e. even number of triangles. Hence the figure cannot be cut up into 5 triangles.

Option (2):

Option (3):

Option (4):

Ans: (1)

Section B

11. Number of flat surfaces \longrightarrow 7

Number of curved surfaces \longrightarrow 2

Difference \longrightarrow 7 - 2

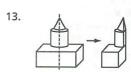
= 5

The solid consists of **5** fewer curved surfaces than flat surfaces.

12.

Number of surfaces of cone \longrightarrow 2 Number of surfaces of cylinder \longrightarrow 3 Number of surfaces of cuboid \longrightarrow 6 Total surfaces \longrightarrow 2 + 3 + 6 = 11

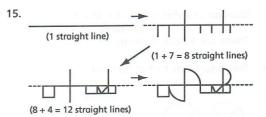
They have 11 surfaces altogether.



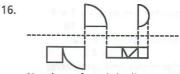
Number of flat surfaces —> 9
The number of flat surfaces is **more** than that in the figure before it is cut.

Number of triangles → 3
 Number of rectangles → 1
 Number of quarter circles → 2
 Difference → (3 + 1) - 2
 = 2

The figure is made up of **2** more triangles and rectangles than quarter circles.



The figure can be obtained by drawing 12 straight lines and 3 curved lines.



Number of straight lines = 16 Difference \longrightarrow 16 - 12 = 4

There are 4 more straight line(s) in the separated figures than the original figure.

 \longrightarrow 9 straight lines

Total number of straight lines in Figures C and D \longrightarrow 0 + 9

 $D \longrightarrow 0 + 9$ = 9Difference $\longrightarrow 12 - 9$ = 3

Figure A has 3 more straight lines than Figures C and D.

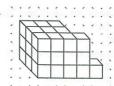
18. Number of curved surfaces in Figure C → 2 There are no curved surfaces in Figures A and B. There are 2 more curved surfaces in Figure C than in Figures A and B.



Number of curved lines in 1 figure → 5
 Number of curved lines in 4 figures → 5 × 4
 = 20
 There are 20 curved lines in all the 4 figures.

Section C

21.



- 22. Number of cubes = $(3 \times 3 \times 4) + 1$ = 37 cubes There are 37 cubes altogther.
- 23. This figure has 11 flat surfaces.

24.



25. Number of quarter circles $\longrightarrow 4 \times 4$ Number of semicircles $\longrightarrow 2 \times 2$ = 4 Sum of quarter circles and semicircles \rightarrow 16 + 4 = 20Difference → 20 - 6 = 14

> There are 14 more quarter circles and semicircles than circles in the 6 figures.

Challenge Yourself!



(b) 2 circles and 1 rectangle

Section A

- Amount spent on Monday → \$10 \$2 = \$8 Amount spent on Friday → \$10 - \$6 = \$4 \rightarrow \$8 - \$4 Difference -= \$4 Ans: (2)
- 2. Amount spent on Tuesday → \$10 Option (1): Amount saved on Mon and Tue = \$2 X Option (2): Amount saved on Mon and Fri \rightarrow \$2 + \$6 = \$8 × Option (3): Amount saved on Wed and Thu \rightarrow \$8 + \$4 = \$12 X Option (4): Amount saved on Thu and Fri \rightarrow \$4 + \$6

= \$10 🗸 Ans: (4)

- 3. Amount saved from Mon to Fri \rightarrow \$2 + \$8 + \$4 + \$6 = \$20 Amount saved on Sat and Sun \longrightarrow \$20 – \$12 = \$8 \rightarrow \$10 + \$10 Amount received on Sat and Sun-= \$20 Amount spent on Sat and Sun \rightarrow \$20 - \$8 = \$12 Ans: (2)
- 4. Amount given in 5 days - \rightarrow 5 × \$12 Amount saved \longrightarrow \$20 Amount spent \longrightarrow \$60 - \$20 = \$40 Ans: (4)
- 5. Amount saved on Sat and Sun \longrightarrow \$24 \$10 = \$14 Saturday 1 unit \$14 Sunday 14 - 2 = 122 units → \$12 1 unit \rightarrow \$12 ÷ 2 = \$6 Amount saved on Sunday - \Rightarrow \$6 + \$2 = \$8

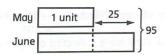
Ans: (2) Number of storybooks Ann and Eve read $\rightarrow 9 \times 5$

= 45 45 - 10 = 35Option (1): Ben \longrightarrow 2 \times 5 = 10 XOption (2): Ben and Carol - \rightarrow 3 \times 5

Option (3): Darren $\longrightarrow 7 \times 5$ = 35 🗸

Option (4): Carol and Darren - \rightarrow 8 \times 5 = 40 X Ans: (3)

- 7. Number of storybooks Ben and Carol read in June \longrightarrow 3 \times 5 = 15 Difference → 35 - 15 = 20Ans: (3)
- Number of storybooks read in May and June \rightarrow 20 + 10 + 5 + 35 + 25 = 95



$$95 - 25 = 70$$

2 units \longrightarrow 70
1 unit \longrightarrow 70 ÷ 2
= 35

She read 35 books in May. Ans: (2)

- 9. Most popular fruit: apple
 Least popular fruit: pear
 Difference → (8 × 3) (3 × 3)
 = 24 9
 = 15
 - Option (1): 2 times the number of pupils who prefer pears
 = 2 × 9
 = 18 X
 - Option (2): 3 fewer pupils than the number of pupils who prefer apples
 = (8 × 3) − 3
 = 24 − 3
 = 21

 ✓
 - Option (3): 1 more pupil than the number of pupils who prefer oranges
 = (4 × 3) + 1
 = 12 + 1
 = 13 *
 - Option (4): 3 more pupils than the number of pupils who prefer oranges
 = (4 × 3) + 3
 = 12 + 3
 = 15 ✓

Ans: (4)

Number of pupils in Class 2A who prefer oranges
 → 4 × 3
 = 12

Number of pupils in Class 2B who prefer apples \longrightarrow 12 × 2 = 24

Total number of pupils in Class $2B \longrightarrow 15 \times 3$ = 45 Number of pupils in Class 2B who do not prefer apples $\longrightarrow 45 - 24$

= 21 Ans: (1)

= 24

Section B

11. Number of children who keep cats and rabbits \longrightarrow 7 × 4 = 28 Number of children who keep hamsters \longrightarrow 6 × 4

Difference
$$\longrightarrow$$
 28 – 24
= 4

= 40

The number of children who keep cats and rabbits is 4 more than those who keep hamsters.

12. Number of children who keep dogs $\longrightarrow 24 + (4 \times 4)$ = 24 + 16

The number of children who keep dogs is 40.

13. Number of children who keep pets

→ 12 + 40 + 24 + 16

= 92

Number of children who do not keep pets

→ 100 - 92

= 8

8 children do not keep pets.

14. Amount spent on hamsters —> \$10 × 24
= \$240
Amount spent on rabbits —> \$4 × 16
= \$64
Total amount spent —> \$240 + \$64
= \$304
They spent \$304 to buy food for their pets in a week.

Number of children who keep hamsters now
 → 24 - 2
 = 22
 Number of children who keep rabbits now

There are 9 more children who keep hamsters than those who keep rabbits now.

Number of pupils who speak English

 → 7 × 10
 = 70
 Number of pupils who speak Mandarin
 → 5 × 10
 = 50

Total number of pupils who speak English and Mandarin

→ 70 + 50 = 120

Number of pupils who speak Malay

Difference \longrightarrow 120 – 30 = 90

There are **90** more pupils who speak English and Mandarin at home than those who speak Malay.

17. Number of pupils who speak Tamil

$$\longrightarrow 2 \times 10$$

= 20

Total number of pupils who speak Malay and Tamil \longrightarrow 30 + 20

Number of triangles representing 50 pupils \rightarrow 50 ÷ 10

The number of pupils who speak Mandarin is represented by 5 triangles.

The number of pupils who speak Malay and Tamil is as many as those who speak Mandarin.

18. Most spoken language: English Least spoken language: Japanese Number of pupils who speak English ---- 70 Number of pupils who speak Japanese ---- 10 Difference → 70 - 10

= 60

There are 60 more pupils who speak the most spoken language than the least spoken language.

19. Total number of pupils who took part in this survey \longrightarrow 70 + 50 + 10 + 30 + 20 + 14 = 194

There were 194 pupils who took part in this survey.

20. Chinese Eurasian ?

$$50 - 40 = 10$$

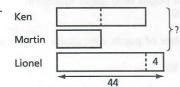
2 units
$$\longrightarrow$$
 10

1 unit
$$\longrightarrow$$
 10 ÷ 2

There are 5 Eurasians who speak Mandarin at home.

Section C

21.



Number of cans collected by Ken $\rightarrow 44 - 4$ = 40

Number of cans collected by Martin

$$\longrightarrow$$
 40 ÷ 2

Number of cans collected by Ken and Martin

$$\longrightarrow$$
 40 + 20

$$= 60$$

Ken and Martin collected 60 soft drink cans . Total amount paid = \$14.40 altogether.

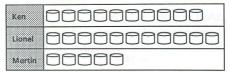
22. Total number of cans collected — = 104

104 soft drink cans were collected altogether.

23. Since Lionel collected 44 cans, each 🗀 stands for $(44 \div 11 =) 4$ cans.

Number of
$$\bigcirc$$
 for Ken \longrightarrow 40 ÷ 4

Number of
$$\bigcap$$
 for Martin \longrightarrow 20 ÷ 4 = 5



Each stands for 4 soft drink cans.

24. Cokke 1 unit Peppsii Green Tea

3 units
$$\longrightarrow$$
 30

1 unit
$$\longrightarrow$$
 30 ÷ 3

2 units
$$\longrightarrow$$
 10 × 2
= 20

He collected 20 Cokke and Peppsii cans.

25. Amount received by Ken and Martin

$$\longrightarrow$$
 60 × \$0.10 = \$6

Amount received by Lionel
$$\longrightarrow$$
 44 × \$0.10

= \$1.60 Martin and Ken received \$1.60 more than Lionel.

= \$4.40

Challenge Yourself!

Red	Blue	Green	White	Yellow
18	9	6	27	12
000000	@@@	99	000000000	9999
Red	Blue	Green	White	Yellow

Each (co) stands for 3 beads.

Semestral Assessment 2

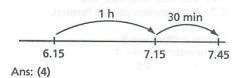
Section A

Ans: (1)

- 1. 18 tens and 19 ones \longrightarrow 180 + 19 = 199 A \longrightarrow 199 + 2 = 201 24 tens and 60 ones \longrightarrow 240 + 60 = 300 B \longrightarrow 402 - 300 = 102 A - B \longrightarrow 201 - 102 = 99
- 2. Mass of 1 cylinder \longrightarrow 80 + 80 = 160 g Mass of 2 cylinders \longrightarrow 160 + 160 = 320 g Additional mass needed \longrightarrow 320 - 80 = 240 g Number of $\boxed{40 \text{ g}}$ needed \longrightarrow 240 ÷ 40 = 6 Ans: (4)
- 3. 624 2 = 354 2 = 624 - 354 = 270Sum of digits $\longrightarrow 2 + 7 + 0$ = 9Ans: (1)
- 4. 6/12 subtracted result

The fraction is $\frac{3}{12}$ Ans: (3)

5. 15 min past 6 → 6.15



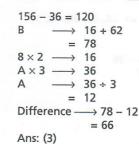
6. Number \longrightarrow 4 × 6 = 24 Sum of digits \longrightarrow 2 + 4 = 6 Ans: (1)

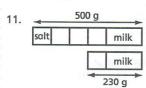
- 7. Value of 10 fifty-cent coins \longrightarrow 10 × \$0.50 = \$5 Value of twenty-cent coins \longrightarrow \$12.20 - \$5 = \$7.20 \$1 \longrightarrow 5 twenty-cent coins \$7 \longrightarrow 5 × 7 = 35 twenty-cent coins Number of twenty-cent coins \longrightarrow 35 + 1 = 36
- 8. Number of straight lines → 20
 Number of curved lines → 6
 Difference → 20 6
 = 14
 Ans: (3)

Ans: (3)

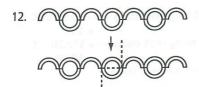
- Since 1 Container B and 1 Container C are equivalent to 2 Containers A, and 2 Containers B are equivalent to 1 Container A, (1 + 2) = 3 Containers B and 1 Container C are equivalent to (2 + 1) = 3 Containers A.
 Volume of 1 Container A → 200 l
 Volume of 3 Containers A → 3 × 200 l
 = 600 l
- 10. 156 A B 8
 36 16
 3 120 2 62

Ans: (4)





Mass of 3 packets of salt \longrightarrow 500 - 230 = 270 g Mass of 1 packet of salt \longrightarrow 270 \div 3 = 90 g Ans: (3)



When the figure is divided into 2 equal parts, there are 5 units in each part.

Subtract $\frac{1}{2}$ \longrightarrow subtract 5 shaded units

When 5 shaded units are subtracted, only 2 shaded units out of a total of 10 remain.

Ans: (2)



Number of triangles = 8 Difference
$$\longrightarrow$$
 8 – 4

= 4

Ans: (3)

14. 8 tens, 3 eights and 12 fours \longrightarrow 80 + (3 × 8) + (12 × 4) = 80 + 24 + 48= 15210 fives \longrightarrow 10 \times 5 = 50

152 - 50 = 102Ans: (2)

15. 4: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, ... $Y \longrightarrow 36$ $Z \longrightarrow 63$ Difference \longrightarrow 63 – 36

= 27

Ans: (3)

Option (1): 102 = 34 + 68

So, A = 68 + 34 ✔

Option (2): A + 102 = 102 + 102

= 204 🗸 Option (3): B = 34 + 102

= 136 🗸

204 - 68 = 136Option (4): B = 34 + 102, not 102 + 204

Ans: (4)

Length of Y \longrightarrow 12 ÷ 2 $= 6 \, \mathrm{m}$

Total length of rope \longrightarrow 12 + 6 + 12 = 30 m

Length of each portion \longrightarrow 30 ÷ 5 = 6 m

Ans: (1)

18. Number of children \longrightarrow 28 ÷ 7 = 4 Number of red beads \longrightarrow 6 \times 4 = 24 Total number of beads \longrightarrow 16 + 28 + 24 = 68

19. Volume of water \longrightarrow (4 × 3) ÷ 2 =61

Number of 2-litre pails needed -= 3

Ans: (3)

Ans: (4)

20. Cost of pants \rightarrow 3 × \$9

= \$27 Cost of T-shirts - $\rightarrow 4 \times 8

= \$32

Total cost \rightarrow \$27 + \$32

= \$59

Amount left → \$98 – \$59 = \$39

Ans: (1)

Section B

21. Numbers that can be formed: 359, 395, 539, 593, 935, 953 6 3-digit numbers can be formed.

22. Denominator
$$\longrightarrow 8$$

Numerator $\longrightarrow 8 - 3$
= 5

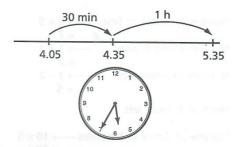
$$? + \frac{1}{8} = \frac{5}{8}$$

The fraction is $\frac{4}{8}$.

23.
$$3 \times 10 = 30$$

 $54 - 30 = 24$
 $4 \times 2 = 24$
 $\Rightarrow = 24 \div 4 = 6$

- 24. Length of 7 equal pieces \longrightarrow 45 10 = 35 m Length of each equal piece \longrightarrow 35 ÷ 7 = 5 m The length of each equal piece is **5 m**.
- 25. 5 minutes past 4 → 4.05



- 26. Mass of 4 blocks and 3 rods → 630 g

 Mass of 3 blocks and 1 rod → 300 g

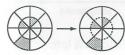
 Mass of 1 block and 2 rods → 630 300

 = 330 g

 Mass of 2 blocks and 4 rods → 2 × 330

 = 330 g

 The total mass of 2 wooden blocks and 4 metal rods is 660 g.
- 27. Divide the figure into 8 equal parts.



Shaded region = $1 - \frac{5}{8}$



 $=\frac{3}{8}$

Number of glasses needed for 1 tank
 → 27 ÷ 3
 = 9
 Number of glasses needed for 2 tanks
 → 9 × 2
 = 18
 Two tanks of water can fill 18 glasses.

Amount Paul has \longrightarrow \$5 + \$2 = \$7 Amount Paul spends \longrightarrow \$2 + \$1 = \$3 Amount Paul saves \longrightarrow \$7 - \$3 = \$4

Amount Jean saves \longrightarrow \$5 - \$2 = \$3

Difference \longrightarrow \$4 - \$3 = \$1

Paul saves \$1 more than Jean.



- 31. Since the number is less than 10, the number will be more than 10 but less than 20 when multiplied by 2, i.e. the tens digit is 1.

 1 × 2 = 2

 The result of multiplying the number by 2 is 12.

 12 ÷ 2 = 6

 6 × 6 = 36

 6 ÷ 3 = 2

 The number is 6.
- 32. Number of beads Darrel collected → 4
 4 × 2 = 8
 Benjamin collected 8 beads.
 Darrel collected half the number of beads of Benjamin.
 +2 (8 beads → \$2
 4 beads → \$2 ÷ 2 = \$1
- 33. Felicity bought 7 groups of 4 beads.

 Amount she paid = 7 × \$1

 = \$7

 Felicity paid \$7 for her beads collection.

34. 30 min 30 min 10 min 6.30 a.m. 7 a.m. 7.30 a.m. 7.40 a.m.

He should leave his house at 6.30 a.m.

35.
$$\times 4$$
 (3 cans \longrightarrow 2 cups
12 cans \longrightarrow 2 \times 4
= 8 cups

12 cans can hold as much liquid as 8 cups.

36. 3 cans
$$\longrightarrow$$
 2 cups
1 jug \longrightarrow 2 cups
3 cans + 1 jug \longrightarrow 2 + 2
= 4 cups
Amount of water in 4 cups \longrightarrow 4 × 1
= 4 l

If a cup can hold 1 l of water, 1 jug and 2 cans can hold 4 l of water.

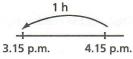
37. Jane's age now
$$\longrightarrow$$
 40 - 15
= 25
Jane's age 6 years later \longrightarrow 25 + 6
= 31
Jane will be 31 years old six years later.

38. Amount of money left
$$\longrightarrow$$
 \$32 - \$8
= \$24

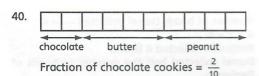
$$\times 3$$
 ($\$8 \longrightarrow 3 \text{ kg}$
 $\$24 \longrightarrow 3 \times 3$
 $= 9 \text{ kg}$

She can buy 9 kg more of grapes.

39.
$$\times 2$$
 (2 cakes \longrightarrow 30 min
4 cakes \longrightarrow 30 \times 2
= 60 min
= 1 h



He should start baking at 3.15 p.m.



Fraction of butter cookies = $\frac{4}{10}$ Fraction of chocolate and butter cookies

The fraction of chocolate and butter cookies Wendy made was $\frac{6}{10}$.

Section C

41. Number of blue balloons \longrightarrow 18 ÷ 2 = 9. Number of pupils \longrightarrow 9 ÷ 3 = 3 Number of green balloons \longrightarrow 3 × 7 = 21 Mrs Ong has 21 green balloons. 42. 3 cans — 1 chocolate bar
1 packet of milk — 2 chocolate bars + 3 cans
— (2 + 1) chocolate bars
= 3 chocolate bars
Mass of 1 packet of milk — 3 × 150
= 150 + 150 + 150
= 450 g

The mass of 1 packet of milk is 450 g.

43. Cost of 3 kg of fish → 3 × \$20 = \$60 Since Nancy only had 5 ten-dollar notes

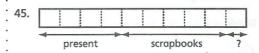
Since Nancy only had 5 ten-dollar notes (value = \$50), she could only pay using 1 fifty-dollar note and 1 \$10 note.

Number of notes at first
$$\longrightarrow$$
 2 + 5
= 7
Number of notes used \longrightarrow 1 + 1
= 2
Number of notes left \longrightarrow 7 - 2
= 5

She had 5 notes left.

44. Volume of water in 5 bottles \longrightarrow 10 × 5 = 50 lVolume of water in 5 cups \longrightarrow 50 ÷ 2 = 25 lVolume of water in 1 cup \longrightarrow 25 ÷ 5 = 5 l

A cup can hold 5 l of water.



 $\frac{1}{10}$ of the original ribbon is left.