

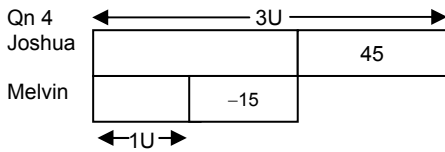
Online Solutions

For P4 +hinkingMath@onSponge™

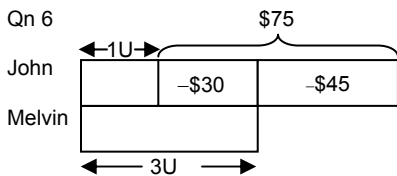
Note : In all solutions, U represents Units

Chapter 1 Whole Numbers

Unit 1.7 – More Than/Less Than (External Unchanged Type 1)

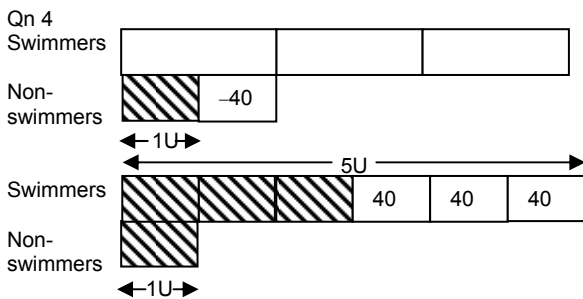


$2U \rightarrow 15 + 45 = 60$
 $1U \rightarrow 30$
 Number of stickers Joshua had at first $\rightarrow 3U \rightarrow 3 \times 30 = 90$



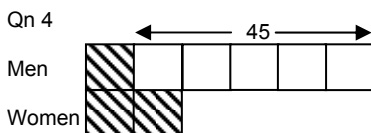
$2U \rightarrow \$30$
 $1U \rightarrow \$15$
 John at first $\rightarrow \$15 + \$75 = \$90$

Unit 1.8 – More Than/Less than (External Unchanged Type 2)



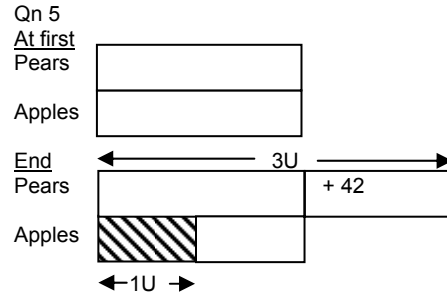
$2U \rightarrow 120$
 $1U \rightarrow 60$
 Number of swimmers at the carnival $\rightarrow 5U \rightarrow 5 \times 60 = 300$

Unit 1.9 – More Than/Less Than (External Unchanged Type 3)

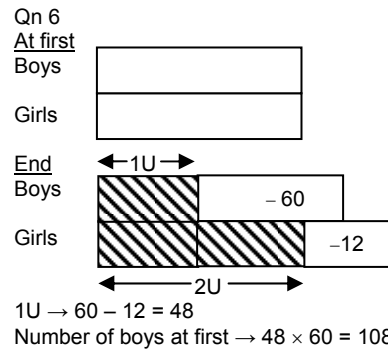


$5U \rightarrow 45$
 $1U \rightarrow 9$
 Number of men at the party at first $\rightarrow 6U \rightarrow 6 \times 9 = 54$

Unit 1.10 – Equal Stage Type 1 (Beginning)

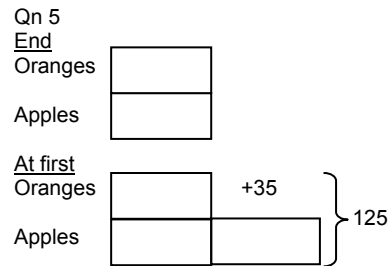


$2U \rightarrow 1U + 42$
 $1U \rightarrow 42$
 Number of apples at first $\rightarrow 42 \times 2 = 84$

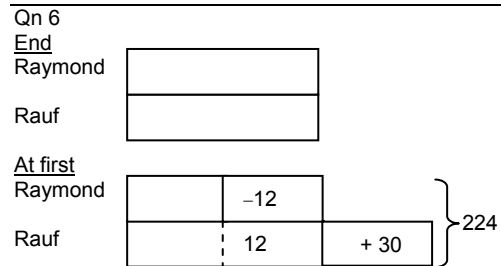


$1U \rightarrow 60 - 12 = 48$
 Number of boys at first $\rightarrow 48 \times 60 = 108$

Unit 1.11 – Equal Stage Type 2 (End)



$3U \rightarrow 125 - 35 = 90$
 $1U \rightarrow 30$
 Number of oranges at first $\rightarrow 30 + 35 = 65$



$2U \rightarrow 224 - 12 - 30 = 182$
 $1U \rightarrow 91$
 Raymond at first $\rightarrow 91$



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Unit 1.12 – Equal Stage Type 3 (Internal Transfer)

Qn 4
End
David

Serene

--

At first
David

		+32
--	--	-----

Serene

1U	-32
----	-----

$4U \rightarrow 32 + 32 = 64$
 $1U \rightarrow 16$
Each at first, Serene $\rightarrow \$16$
David $\rightarrow 5 \times \$16 = \80

Unit 1.13 – Multiple Quantities (More than/Less than)

Qn 7
1 bat

--

1 racket

		+\$22
--	--	-------

4 bats

--	--	--	--

7 rackets

--	--	--	--	--	--	--

 $(+\$22 \times 7)$ } \$286

$11U + \$154 \rightarrow \286
 $11U \rightarrow \$132$
 $1U \rightarrow \$12$
1 racket costs $\$12 + \$22 = \$34$

Qn 8
1 CD

--

1 shirt

	\$8
--	-----

1 Bermuda

	\$8	+\$12
--	-----	-------

 } \$76

$3U + \$28 \rightarrow \76
 $3U \rightarrow \$48$
 $1U \rightarrow \$16$
1 T-shirt costs $\rightarrow \$16 + \$8 = \$24$

Qn 9
2 cups

--

1 plate

	\$3
--	-----

1 bowl

	\$3	\$2
--	-----	-----

 } \$18

$4U + \$8 \rightarrow \18
 $4U \rightarrow \$10$
 $1U \rightarrow \$2.50$
 $12 \text{ cups} \rightarrow 12 \times \$2.50 = \$30$

Unit 1.14 – Number of Units and Value of Units

Qn 5

	Number	x	Value	\rightarrow	Total
Adults	1U	x	\$8	\rightarrow	8U
Children	20U	x	\$5	\rightarrow	100U
					108U \rightarrow 432
					1U \rightarrow 432 \div 108 = 4

Total number of children $\rightarrow 20U \rightarrow 20 \times 4 = 80$



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Qn 6

	Number	x	Value	\rightarrow	Total
Correct Qn	5U	x	3 points	\rightarrow	15U
Wrong Qn	1U	x	-2points	\rightarrow	-2U
			Difference		13U \rightarrow 104
					1U \rightarrow 104 \div 13 = 8

Number of questions answered correctly $\rightarrow 5U \rightarrow 5 \times 8 = 40$

Unit 1.15 – Repeated Identity (Type 1)

Qn 4
Michelle

--	--	--	--

Chris

--

Rebecca

--	--

 $\leftarrow 8$

$2U \rightarrow 8$
 $1U \rightarrow 8 \div 2 = 4$
Total dolls collected $\rightarrow 7U \rightarrow 7 \times 4 = 28$

Qn 5
Boys

--	--	--	--

Girls

--

Adults

Difference between adults and boys
 $\rightarrow 11U \rightarrow 88$
 $1U \rightarrow 8$
Total number of people at the fun fair $\rightarrow 20U \rightarrow 20 \times 8 = 160$

Unit 1.16 – Repeated Identity (Type 2)

Qn 5
Green

--

Blue

	15
--	----

Red

	15
	15

 } 141

$4U + 45 \rightarrow 141$
 $4U \rightarrow 96$
 $1U \rightarrow 24$
Total green balloons $\rightarrow 24$

Unit 1.17 – Repeated Identity (Type 3)

Qn 2
Difference in students = Difference in girls
Difference : $3U \rightarrow 420 - 225 = 195$
 $1U \rightarrow 195 \div 3 = 65$ (Girls in Campsite A)
Number of boys in Campsite A $\rightarrow 225 - 65 = 160$
Total number of boys in both campsites $\rightarrow 160 \times 2 = 320$

Qn 3
Difference in red and blue balls $\rightarrow 3U - 1U = 2U$
 $2U \rightarrow 320 - 180 = 140$
 $1U \rightarrow 70$
Total number of green balls in both bags $\rightarrow (180 - 70) \times 2 = 220$

Qn 5

Serene + Tommy → 130
 Tommy + Clara → 141
 Serene + Clara → 99

Twice of (Serene + Tommy + Clara) → 370
 Serene + Tommy + Clara → 185

Serene → 185 - 141 = 44

Chapter 2 Fraction

Unit 2.1 – Addition & Subtraction of Fractions (Type 1)

Qn 6

$$\frac{7}{12} - \frac{5}{12} = \frac{2}{12} = \frac{1}{6}$$

$\frac{1}{6}$ ribbon → 24 cm

Ribbon at first → 24 × 6 = 144 cm

Unit 2.3 – Addition & Subtraction of Fractions (Type 3)

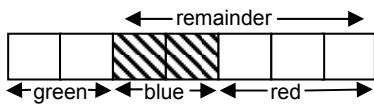
Qn 4

$$\text{Weight of cup} \rightarrow \frac{2}{3} \text{ kg} - \frac{2}{5} \text{ kg} = \frac{10}{15} \text{ kg} - \frac{6}{15} \text{ kg} = \frac{4}{15} \text{ kg}$$

$$\begin{aligned} \text{Difference in weight} &\rightarrow \frac{2}{5} \text{ kg} - \frac{4}{15} \text{ kg} = \frac{6}{15} \text{ kg} - \frac{4}{15} \text{ kg} \\ &= \frac{2}{15} \text{ kg} \end{aligned}$$

Unit 2.4 Part-whole Relationship (Type 1)

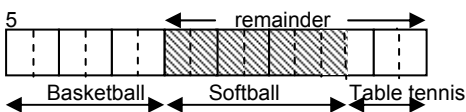
Qn5



Difference between red and green → 1U → 12
 Total in the bag → 7U → 7 × 12 = 84

Unit 2.5 – Part-whole Relationship (Type 2)

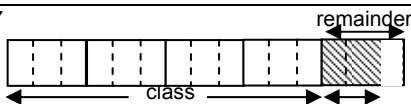
Qn 5



Difference between basketball and table tennis
 → 3U → 9
 1U → 3

Total in the class → 16U → 16 × 3 = 48

Qn 7

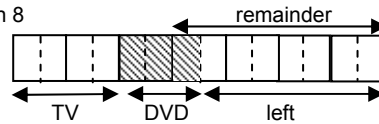


1U → 30
 Total → 15U → 15 × 30 = 450



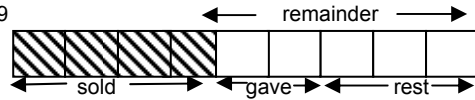
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Qn 8



7U → 630
 1U → 90
 Total → 14U → 14 × 90 = \$1260

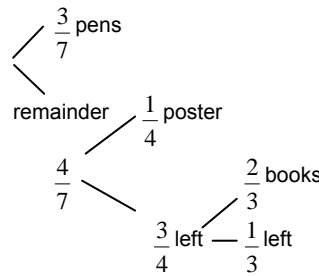
Qn 9



Total → 9U → 360
 1U → 40
 Rest → 3U → 3 × 40 = 120
 Number of boxes → 120 ÷ 30 = 4

Unit 2.6 Part-whole Relationship (Type 3)

Qn 3



Final Fraction

$$\begin{aligned} &\frac{3}{7} \\ &\frac{1}{4} \times \frac{4}{7} = \frac{1}{7} \\ &\frac{2}{3} \times \frac{3}{4} \times \frac{4}{7} = \frac{2}{7} \\ &\frac{1}{3} \times \frac{3}{4} \times \frac{4}{7} = \frac{1}{7} \end{aligned}$$

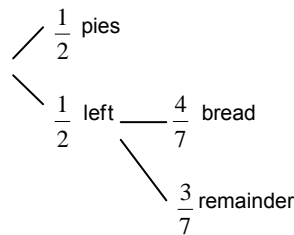
(a) Fraction of money left → $\frac{1}{7}$

(b) Difference between books and posters → $\frac{2}{7} - \frac{1}{7} = \frac{1}{7}$

Since $\frac{1}{7}$ → \$12, $\frac{7}{7}$ → \$12 × 7 → \$84

Sum of money Serene had at first → \$84

Qn 4

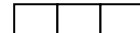


Final Fraction

$$\begin{aligned} &\frac{1}{2} = \frac{7}{14} \\ &\frac{1}{2} \times \frac{4}{7} = \frac{4}{14} \\ &\frac{1}{2} \times \frac{3}{7} = \frac{3}{14} \end{aligned}$$

Cost of Bread and Pie

1 Loaf of Bread



3U

1 Pie



1U

$\frac{4}{14}$ total → 8 loaves of bread

Since 1 loaf of bread → 3U, 8 loaves of bread → 8 × 3U → 24U

$\frac{4}{14}$ total → 24U

$\frac{1}{14}$ total → 6U

Number of pies → $\frac{7}{14}$ total → 7 × 6 = 42U (42 pies since 1 pie is 1U)

Qn 5

$\frac{2}{7}$ wife $\frac{5}{7}$ remainder	$\left\{ \begin{array}{l} \frac{1}{3} \text{ bills} \\ \frac{2}{3} \text{ left} \end{array} \right.$	Final Fraction $\frac{2}{7} = \frac{6}{21}$ $\frac{1}{3} \times \frac{5}{7} = \frac{5}{21}$ $\frac{2}{3} \times \frac{5}{7} = \frac{10}{21}$
---	--	--

$\frac{10}{21}$ total → \$2200
 $\frac{1}{21}$ total → \$220
 $\frac{21}{21}$ total → \$220 × 21 = \$4620
 Mr Imran's salary → \$4620

Qn 6

$\frac{1}{4}$ boys $\frac{3}{4}$ girls	$\left\{ \begin{array}{l} \frac{3}{5} \text{ non-swimmers} \\ \frac{2}{5} \text{ swimmers} \end{array} \right.$ $\left\{ \begin{array}{l} \frac{2}{5} \text{ non-swimmers} \\ \frac{3}{5} \text{ swimmers} \end{array} \right.$	Final Fraction $\frac{1}{4} \times \frac{3}{5} = \frac{3}{20}$ $\frac{1}{4} \times \frac{2}{5} = \frac{2}{20}$ $\frac{3}{4} \times \frac{2}{5} = \frac{6}{20}$ $\frac{3}{4} \times \frac{3}{5} = \frac{9}{20}$
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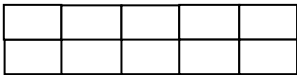
Total swimmers → $\frac{9}{20} + \frac{2}{20} = \frac{11}{20}$

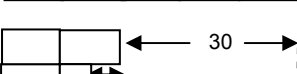
$\frac{11}{20} \rightarrow 154$
 $\frac{1}{20} \rightarrow 154 \div 11 = 14$
 $\frac{20}{20} \rightarrow 20 \times 14 = 280$
 There were 280 students.

Unit 2.8 Equal Stage (Type 1)

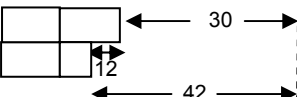
Qn 5

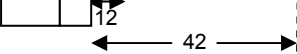
At first

Boys 

Girls 

End

Boys 

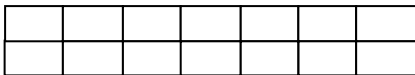
Girls 

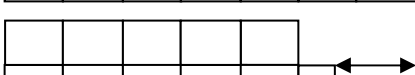
$3U \rightarrow 42 - 12 = 30$
 $1U \rightarrow 10$

Total number of students at first → 10U → 10 × 10 = 100

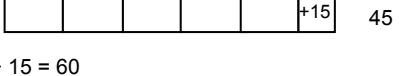
Qn 6

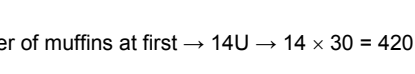
At first

Banana 

Chocolate 

End

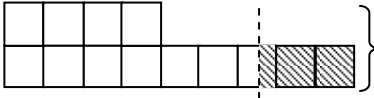
Banana 

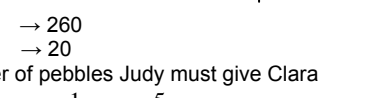
Chocolate 

$2U \rightarrow 45 + 15 = 60$
 $1U \rightarrow 30$
 Total number of muffins at first → 14U → 14 × 30 = 420

Unit 2.9 – Equal Stage (Type 2)

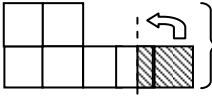
Qn 4

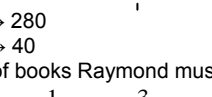
Clara 

Judy 

$13U \rightarrow 260$
 $1U \rightarrow 20$
 Number of pebbles Judy must give Clara
 → $2 \frac{1}{2} U \rightarrow 2 \frac{1}{2} \times 20 = \frac{5}{2} \times 20 = 50$

Qn 5

David 

Raymond 

$7U \rightarrow 280$
 $1U \rightarrow 40$
 Number of books Raymond must give David
 → $1 \frac{1}{2} U \rightarrow 1 \frac{1}{2} \times 40 = \frac{3}{2} \times 40 = 60$

Unit 2.10 – Equal Stage (Type 3)

Qn 5

$\frac{3}{4}$ boys → $\frac{2}{3}$ girls
 $\frac{6}{8}$ boys → $\frac{6}{9}$ girls
 Boys → 8U
 Girls → 9U
 Total → 17U → 510
 $1U \rightarrow 30$
 Difference between boys and girls → 1U → 30

Qn 9

$\frac{1}{4}$ Esther → $\frac{3}{7}$ Kevin
 $\frac{3}{12}$ Esther → $\frac{3}{7}$ Kevin

Esther → 12U
 Kevin → 7U
 Difference → 5U → \$350
 $1U \rightarrow \$70$
 Kevin → 7U → 7 × \$70 = \$490

Qn 10

$\frac{2}{5}$ boys → $\frac{3}{8}$ girls
 $\frac{6}{15}$ boys → $\frac{6}{16}$ girls

Boys → 15U
 Girls → 16U
 Difference → 1U → 30
 Boys at first → 15U → 15 × 30 = 450

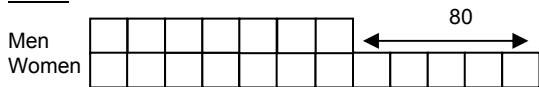


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Unit 2.11 – External Unchanged (Type 1)

Qn 4

At first



5U → 80
1U → 16

Men → 16 × 7 = 112
Women → 12 × 16 = 192

End
Men → 1U
Women → 3U

Since women remain the same,
3U → 192
1U → 64
Number of men who left halfway → 112 – 64 = 48

Unit 2.12 – External Unchanged (Type 2)

Qn 1

At first
Orange → 3U
Water → 7U

End
Orange → 1U × 3 → 3U
Water → 4U × 3 → 12U

Increase in water used → 12U – 7U = 5U
5U → 1100 m^l
1U → 220 m^l
Amount of syrup used → 3U → 3 × 220 = 660 m^l

Qn 4

At first
Oranges → 1U × 3 → 3U
Pears → 2U × 3 → 6U

End (conditional)
Oranges → 3U
Pears → 2U

Decrease in pears → 6U – 2U → 4U
4U → 20
1U → 5
Total → 9U → 9 × 5 = 45

Qn 5

At first
Red → 1U × 5 → 5U
Blue → 3U × 5 → 15U

End
Red → 2U × 3 → 6U
Blue → 5U × 3 → 15U

Increase in red → 6U – 5U = 1U
2U → 12
Total → 20U → 20 × 12 = 240



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Unit 2.13 – Repeated Identity

Qn 3

Boys → 1U × 5	}	Boys → 5U
Girls → 3U × 5		Girls → 15U
Adults → 2U × 4	}	Adults → 8U
Children → 5U × 4		

Difference between adults and boys → 8U – 5U = 3U
3U → 24
1U → 8
Total number of people → 28U → 28 × 8 = 224

Chapter 5 Area and Perimeter

Unit 5.3 – Area and Perimeter of Composite Figures (Basics)

Qn 5

Area of rectangle = 14 cm × 10 cm = 140 cm²
Area of 4 squares = 2 cm × 2 cm × 4 = 16 cm²

Area of remaining figure = 140 cm² – 16 cm² = 124 cm²

Perimeter of remaining figure = (14 cm + 10 cm) × 2 = 48 cm

Qn 6

Area of rectangle = 22 cm × 14 cm = 308 cm²
Area of 4 squares = 2 cm × 2 cm × 4 = 16 cm²

Area of remaining figure = 308 cm² – 16 cm² = 292 cm²

Perimeter of remaining figure
= (22 cm + 14 cm) × 2 + 4 cm + 4 cm
= 72 cm + 8 cm
= 80 cm

Unit 5.4 – Area and Perimeter of Proportional Figures

Qn 4

Breadth = 2 units
Length = 3 units

2 units × 3 unit → 54 cm²
1 unit × 1 unit → 54 cm² ÷ 6 → 9 cm²
1 unit → 3 cm

Breadth = 2 × 3 = 6 cm
Length = 3 × 3 = 9 cm
Perimeter = (6 cm + 9 cm) × 2 = 30 cm

Qn 5

Breadth = 3 units
Length = 4 units

3 units × 4 unit → 192 cm²
1 unit × 1 unit → 192 cm² ÷ 12 → 16 cm²
1 unit → 4 cm

Breadth = 3 × 4 = 12 cm
Length = 4 × 4 = 16 cm
Perimeter = (12 cm + 16 cm) × 2 = 56 cm

Unit 5.5 – Area And Perimeter of Squares Using Guess and Check

Qn 5

Length of square garden = 8m
Area of big square = (8+6)m × (8+6)m
= 14m × 14m = 196 m²
Area of pathway = 196 m² – 64 m² = 132 m²

Qn 6
 Length of small square = 8 cm
 Length of big square = 8 cm + 4 cm = 12 cm
 Area of big square = 12 cm × 12 cm = 144 cm²

Qn 7
 Since 64 - 16 = 48
 Area of big square = 64cm²

Qn 8
 Since 36cm² + 64cm² = 100 cm²
 Length of small square = 6 cm
 Length of big square = 8 cm
 Total perimeter = (6 cm + 8 cm + 8 cm) × 2 = 44 cm

Qn 9
 Since 81cm² + 144cm² = 225 cm²
 Length of small square = 9 cm
 Length of big square = 12 cm
 Total perimeter of figure = (12 cm + 12 cm + 9 cm) × 2 = 66 cm

Unit 5.6 – Area and Perimeter of Composite Figures (Intermediate)

Qn 3
 Perimeter of garden = (2 units + 1 unit) × 2 = 6 units
 6 units → 48 m
 1 unit → 8 m
 Area of garden = 16 m × 8 m = 128 m²
 Area of big rectangle = 20 m × 12 m = 240 m²
 Area of pathway = 240 m² - 128 m² = 112 m²

Qn 5
 Area of field = 2 units × 1 units = 3200m²
 1 unit × 1 unit = 1600m²
 1 unit = 40 m
 Length (field) = 80 m
 Breadth (field) = 40 m
 Area of big rectangle = 90 m × 50 m = 4500 m²
 Area of track = 4500 m² - 3200m² = 1300 m²

Qn 6

	8 m	3 m	
4 m	32 m ²	12 m ²	4 m
2 m	16 m ²	6 m ²	2 m
	8 m	3 m	

Perimeter of figure = (6 m + 11 m) × 2 = 34 m

Qn 8

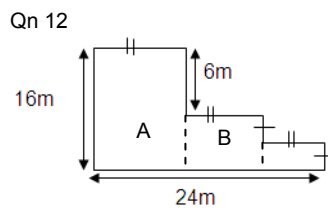
	10 m	5 m	
6 m	60 m ²	30 m ²	6 m
3 m	A	15 m ²	3 m
	10 m	5 m	

Area A = 10 m × 3 m = 30 m²

Qn 9

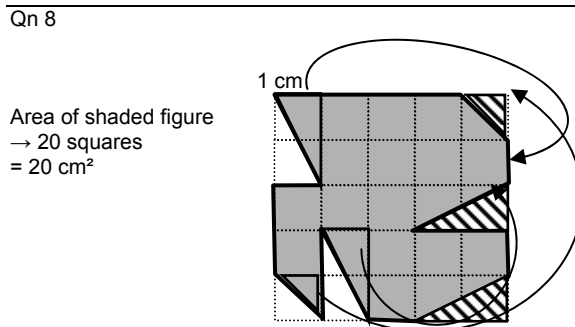
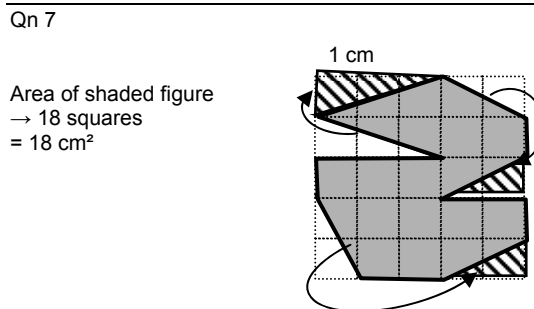
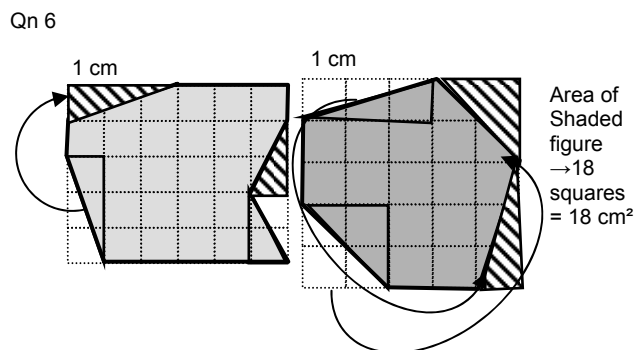
	14 m	6 m	
8 m	112 m ²	48 m ²	8 m
8 m		12 m ²	2 m
	14 m	6 m	

Shaded Area = 14 m × 2 m = 28 m²



24 ÷ 3 = 8 m
 Area A = 16 m × 8 m = 128 m²
 Area B = 8 m × 10 m = 80 m²
 (16 - 6) ÷ 2 = 5 m
 Area C = 8 m × 5 m = 40 m²
 Total Area = 128 m² + 80 m² + 40 m² = 248 m²
 Total Perimeter = (24 m + 16 m) × 2 = 80 m

Unit 5.7 – Area Using Cut and Paste



Chapter 8 Decimals

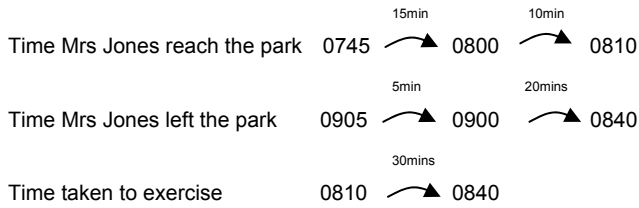
Unit 8.8 Division of Decimals

Qn 8
 Cost of magazine → \$4.50 × 2 = \$9
 Amount spent on pens → \$50 - \$9 = \$41
 Cost of each pen → \$41 ÷ 6 = \$6.83

Qn 9
 Cost of 3 calculators → \$15.50 × 3 = \$46.50
 Cost of 5 towels → \$100 - \$46.50 = \$53.50
 Cost of 1 towel → \$53.50 ÷ 5 = \$10.70

Unit 10.4 Word Problems Involving Time

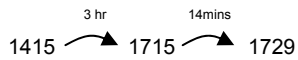
Qn 4



The exercise lasted 30 minutes.

Qn 5

- Time taken for multiple choice questions $\rightarrow 5 \text{ mins} \times 10$
 $\rightarrow 50 \text{ mins}$
- Time taken for work problems $\rightarrow 18 \text{ mins} \times 8$
 $\rightarrow 144 \text{ mins}$
- Time taken altogether $\rightarrow 50 \text{ mins} + 144 \text{ mins}$
 $\rightarrow 194 \text{ mins}$
 $\rightarrow 3 \text{ hr } 14 \text{ mins}$



John completed his trial paper at 1729 h



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