

Online Solutions

For P6 ThinkingMath@onSponge

Note : In all solutions, U represents Units

Chapter 1 More than/Less than

Unit 1.1 – More Than/Less Than (Model Drawing)

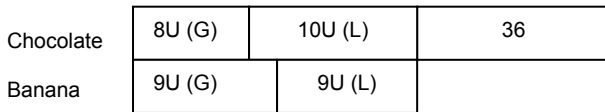
Qn 2

G – Gave

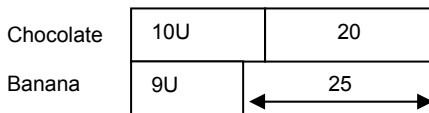
L – Left

$$\frac{4}{9} = \frac{8}{18} \quad \frac{1}{2} = \frac{9}{18} \quad \frac{4}{9} \times 36 = 16$$

$$G = 16 \quad L = 36 - 16 = 20$$



Left



1U → 5

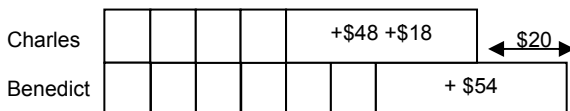
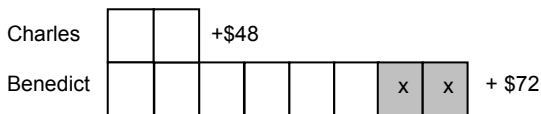
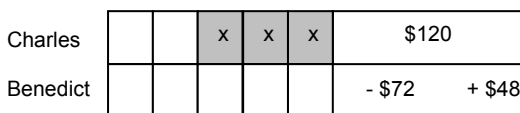
$$\begin{aligned} \text{Total chocolate muffins at first} &\rightarrow 18U + 36 \\ &\rightarrow (18 \times 5) + 36 \\ &= 126 \end{aligned}$$

Qn 3

$$60\% = \frac{3}{5} \quad 25\% \text{ of } \$72$$

$$\frac{3}{5} \times \$120 = \$72 \quad \frac{1}{4} \times \$72 = \$18$$

$$\$120 - \$72 = \$48 \quad \$72 - \$18 = \$54$$



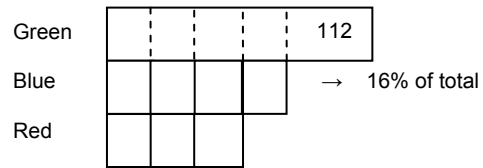
$$2 \square \rightarrow \$48 + \$18 + \$20 - \$54 = \$32$$

$$\square \rightarrow \$16$$

$$\text{Charles at first} \rightarrow 5 \square + \$120$$

$$= (5 \times \$16) + \$120 = \$200$$

Qn 10



$$4 \square \rightarrow 16\% \text{ total}$$

$$\square \rightarrow 4\% \text{ total}$$

$$\text{Total } 11 \square \rightarrow 44\% \text{ total}$$

$$100\% - 44\% = 56\%$$

$$56\% \rightarrow 112$$

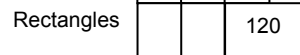
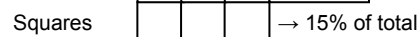
$$1\% \rightarrow 2$$

$$\text{Total in bag} \rightarrow 100\%$$

$$\rightarrow 100 \times 2 = 200$$

Qn 11

$$\frac{2}{3} \times 180 = 120$$



$$3 \square \rightarrow 15\% \text{ total}$$

$$\square \rightarrow 5\% \text{ total}$$

$$8 \square \rightarrow 40\% \text{ total}$$

$$100\% - 40\% = 60\%$$

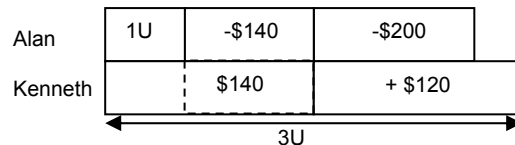
$$60\% \rightarrow 300$$

$$15\% \rightarrow 75$$

$$\text{Total number of triangles} \rightarrow 75 + 180 = 255$$

Qn 14

At first



$$2U \rightarrow \$140 + \$120$$

$$= \$260$$

$$1U \rightarrow \$130$$

$$\text{Total at first} \rightarrow 1U + \$340 + 1U + \$140$$

$$\rightarrow 2U + \$480$$

$$\rightarrow (2 \times \$130) + \$480 = \$740$$

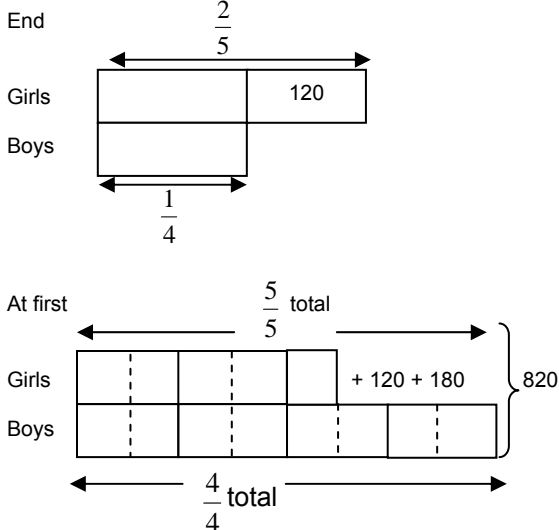


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Chapter 2 Patterns

Unit 2.1 – Equal Intervals

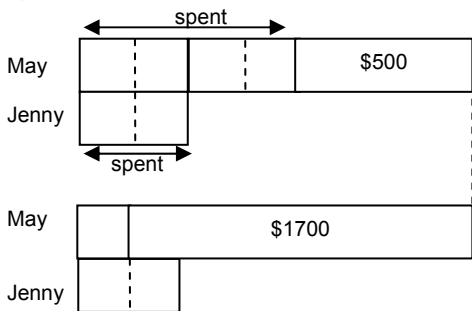
Qn 15



Therefore,
 Total $\rightarrow 13 \square + 300 \rightarrow 820$
 $13 \square \rightarrow 520$
 $\square \rightarrow 40$

Boys at first $\rightarrow 8 \square \rightarrow (8 \times 40) = 320$

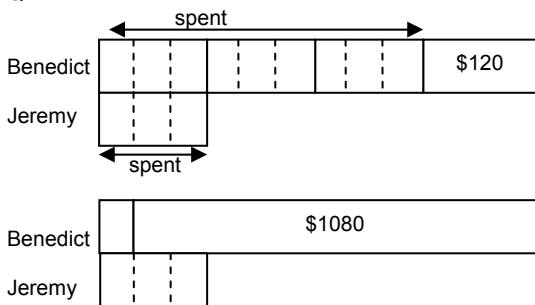
Qn 16



$3 \square \rightarrow \$1700 - \500
 $\square \rightarrow \$400$

May has $\$1700 + \$400 = \$2100$
 Jenny has $\$800$

Qn 17



$8 \square + \$120 \rightarrow \1080
 $8 \square \rightarrow \$960$
 $\square \rightarrow \$120$

Each at first
 Benedict $\rightarrow \$120 + \$1080 = \$1200$
 Jeremy $\rightarrow \$120 \times 3 = \360

Qn 4

(a)

Fig.	No. of squares	No. of triangles	Perimeter	No. of sticks
1	1	2	6	8
2	2	4	10	15
3	3	6	14	22
4	4	8	18	29
:	:	:	:	:
:	:	:	:	:
8	8	16	$6 + (7 \times 4)$ $= 6 + 28$ $= 34$	$8 + (7 \times 7)$ $= 8 + 49$ $= 57$

(b) Perimeter for Figure 50 $\rightarrow 6 + (49 \times 4)$
 $= 6 + 196 = 202$ units

(c) No. of sticks for figure 100 $\rightarrow 8 + (99 \times 7)$
 $= 8 + 693 = 701$ sticks

(d) $254 - 6 = 248$
 $248 \div 4 = 62$ squares
 Figure No = $62 + 1 = 63$
 No. of squares = 63

Qn 8

- (a) Total seats $\rightarrow (4 \times 4) + 2 = 18$ seats
 (b) Total seats $\rightarrow (20 \times 4) + 2 = 82$ seats
 (c) Total seats $\rightarrow (100 \times 4) + 2 = 402$ seats
 (d) $370 - 2 = 368$
 $368 \div 4 = 92$
 Diagram 92 could seat 370 students

Qn 9

(a)

Block.	1-T	2-T	3-T	4-T
Perimeter (cm)	10	14	18	22

- (b) Perimeter of a 20-T block $\rightarrow 10 + (19 \times 4)$
 $= 10 + 76 = 86\text{cm}$
 (c) Perimeter of a 100-T block $\rightarrow 10 + (99 \times 4)$
 $= 10 + 396$
 $= 406\text{cm}$
 (d) $106 - 10 = 96$
 $96 \div 4 = 24$
 $24 + 1 = 25\text{-T block}$
 No. of squares $\rightarrow 25 \times 4 = 100$ squares



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Unit 2.2 – Square Numbers

Qn 1

Diagram, n	1	2	3	4	5
No. of shaded squares, S	1	5	9	13	17
No. of unshaded squares	0	4	16	36	64
Total no. of squares, T	1	9	25	49	81

(b) Total squares in diagram 30 $\rightarrow (30 + 29)^2 = 59^2$
 $= 59 \times 59 = 3481$ squares

(c) Total unshaded squares $\rightarrow (49 \times 2)^2 = 98^2$
 $= 98 \times 98 = 9604$ unshaded squares

(d) $29 - 1 = 28$
 $28 \div 4 = 7$
 $7 + 1 = 8$

Diagram 8 has 29 shaded squares

Qn 2

	No. of squares	Total
Fig. 1	$1 = 1$	1
Fig. 2	$1 + 4 = 5$	5
Fig. 3	$1 + 4 + 9 = 14$	14
Fig. 4	$1 + 4 + 9 + 16 = 30$	30

(b) $1 + 4 + 9 + 16 + 25 + 36 + 49 + 64 + 81$
 $= 285$ squares
 Figure 9 since $9 \times 9 = 81$

Unit 2.4 – Sum of Consecutive Numbers

Qn 3

(a) Area $= \frac{20 \times 21}{2} \times 4 \text{cm}^2 = 840 \text{cm}^2$
 Perimeter $\rightarrow 20 \times 2 \text{cm} \times 4 = 160 \text{cm}$

(b) No. of cubes for figure 40 $\rightarrow \frac{40 \times 41}{2} = 820$

(c) Area $\rightarrow \frac{90 \times 91}{2} \times 4 \text{cm}^2 = 16380 \text{cm}^2$
 Perimeter $\rightarrow 90 \times 2 \text{cm} \times 4 = 720 \text{cm}$

Unit 2.6 – Multiple of Sum of Consecutive

Qn 1

- Day 1 $\rightarrow 3 \times 1 = 3$
- Day 2 $\rightarrow 5 \times 3 = 3 + 12 = 15$
- Day 3 $\rightarrow 7 \times 5 = 3 + 12 + 20 = 35$
- Day 4 $\rightarrow 9 \times 7 = 3 + 12 + 20 + (9 + 9 + 10) = 63$

(a) No. of cubes added on Day 5 $\rightarrow (11 \times 2) + (7 \times 2)$
 $= 22 + 14 = 36$ cubes

(b) Total blocks on Day 10 $\rightarrow (10 \times 2 + 1) \times (10 \times 2 + 1 - 2)$
 $= 21 \times 19 = 399$

(c) Total blocks on Day 30 $\rightarrow (30 \times 2 + 1) \times (30 \times 2 + 1 - 2)$
 $= 61 \times 59 = 3599$



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Qn 2

(a) No. of small triangles $\rightarrow 16$
 No. of sticks $\rightarrow 30$
 $\rightarrow 3 \times 10$

(b) Figure 5 $\rightarrow 50 \times 50 = 2500$ triangles
 Sticks $\rightarrow 3 \times (1 + 2 + 3 + \dots + 50)$
 $= 3 \times \frac{50 \times 51}{2} = 3825$

(c) Figure 100 $\rightarrow 100 \times 100 = 10000$ triangles
 Sticks $\rightarrow 3 \times (1 + 2 + 3 + \dots + 100)$
 $= 3 \times \frac{100 \times 101}{2} = 15150$ sticks

(d) $84 \div 3 = 28$
 $28 \times 2 = 56$
 Since $7 \times 8 = 56$
 Figure 7, no. of triangles $\rightarrow 7 \times 7 = 49$

Qn 5

(a) Total no. of dots; No of small right angled triangles
 T4 $\rightarrow 25; 32,$
 T10 $\rightarrow 11 \times 11 = 121; 10 \times 20 = 200$

(b) Total dots for figure 20 $\rightarrow 21 \times 21 = 441$

(c) Total no. of small right angled triangles in figure 50 $\rightarrow 50 \times 100$
 $= 5000$

(d) No, because $340 \div 2 = 170$ is not a square number.
 (Eg. 49 is a square number because $7 \times 7 = 49$)

Chapter 3 Circles

Unit 3.2 – Composite Figure (Rugby ball = 2 x (Quadrant – Triangle))

Qn 3

$\frac{1}{8}$ shaded part \rightarrow quadrant - triangle

$\frac{\pi r^2}{4} - (\frac{1}{2} \times b \times h) \rightarrow [\frac{\pi}{4} \times (\frac{7}{2})^2] - [\frac{1}{2} \times (\frac{7}{2})^2]$
 $\approx 3.5 \text{cm}^2$

Shaded part $\rightarrow 3.5 \times 8 = 28 \text{cm}^2$

Qn 4

Area \rightarrow circle - square

$\rightarrow \pi r^2 - 2(\frac{1}{2} \times 16 \times 8) \rightarrow \pi (8)^2 - (16 \times 8) \approx 73 \text{cm}^2$

Qn 7

Area $\rightarrow \frac{1}{4}$ big circle $\rightarrow \frac{1}{4} \pi r^2 \rightarrow \frac{1}{4} \pi (20)^2 \approx 314 \text{cm}^2$

Qn 8

Perimeter $\rightarrow 1$ small circle + 1 big quadrant $\rightarrow 2\pi r + \frac{2\pi r}{4}$

$\rightarrow 2\pi (7) + \frac{2\pi(14)}{4} \approx 66 \text{cm}$

Area \rightarrow quadrant - triangle $\rightarrow \frac{\pi r^2}{4} - (\frac{1}{2} \times b \times h)$

$\rightarrow [\frac{\pi(14)^2}{4} - [\frac{1}{2} \times (14)^2]$

$\approx 56 \text{cm}^2$

Unit 3.3 – Similar Figures

Qn 3
 Diameter (S) : Diameter (M) : Diameter (B)
 → 4 : 8 : 12
 = 1 : 2 : 3
 Area (S) : Area (M) : Area (B)
 = 1 : 4 : 9
 Shaded part → $9U - 4U - 1U = 4U$
 Area of small semi-circle → $1U = \frac{1}{2} \pi (2)^2 \approx 6.3$
 Area of shaded → $4U \rightarrow 4 \times 6.3 \approx 25\text{cm}^2$
 Perimeter of shaded part → 1 big circle → $2\pi r$
 → $2\pi(6)$
 ≈ 38cm

Qn 6
 Diameter (S) : Diameter (M) : Diameter (B) → 1 : 2 : 4
 Area (S) : Area (M) : Area (B) → 1 : 4 : 16
 Shaded part → $16U - 4U - (1 \times 4)U = 8U$

Diameter (S) → $72 \div 4 = 18$ cm
 Radius → 9 cm
 Area of small circle → $1U \rightarrow \pi(9)^2 = 81\pi \text{ cm}^2$
 Area of shaded part → $81\pi \times 8 = 648\pi \text{ cm}^2$

Qn 8
 Perimeter → 1 quadrant + 1 semi + 16
 → 1 semi-circle(big) + 16
 → $\pi r + 16 = \pi(16) + 16 \approx 66\text{cm}$
 Area of (quadrant) → $\frac{\pi(16)^2}{4} \approx 201.1\text{cm}^2$
 Area of (semi) ≈ 100.6cm²
 Shaded → $201.1 - 100.6$
 ≈ 101cm²

Unit 3.4 – Cut and Paste

Qn 5
 Area of shaded part → area of sector → $\frac{120}{360} \times \pi(10)^2$
 ≈ 105cm²

Qn 7
 Area of shaded part → area of triangle → $\frac{1}{2} \times 16 \times 8 = 64 \text{ cm}^2$

Qn 10
 Square – quadrant → $(12)^2 - \frac{\pi(12)^2}{4} \approx 30.9\text{cm}^2$
 Area of region Z → $30.9 \div 2 \approx 15.5\text{cm}^2$
 Shaded area → semi-circle – region Z
 → $\frac{\pi(12)^2}{2} - 15.5 \approx 211 \text{ cm}^2$

Qn 13
 Area of shaded → big semi – triangle + rectangle(after cut N paste)
 → $\frac{\pi(14)^2}{2} - \frac{1}{2}(28)(10) + (14 \times 7)$
 ≈ 266cm²

Unit 3.5 Overlapping Method

Qn 4
 Triangle → 48cm²
 $\frac{1}{3}$ triangle → 16cm²
 Area of 1 circle → $\pi \times 6 \times 6 \approx 113.1 \text{ cm}^2$
 $113.1 - 48 = 65.1 \text{ cm}^2$
 $65.1 \div 3 = 21.7 \text{ cm}^2$
 Area of 1 shaded → $21.7 \text{ cm}^2 - 16 \text{ cm}^2 = 5.7 \text{ cm}^2$
 Area of shaded parts → $5.7 \text{ cm}^2 \times 3 = 17.1 \text{ cm}^2$

Qn 5
 Area of Region A → rectangle – quadrant
 = $(8 \times 4) - \frac{\pi(4)^2}{4} \approx 19.4\text{cm}^2$
 Shaded region → Big semi-circle - (2 x region A)
 = $\frac{\pi(8)^2}{2} - (2 \times 19.4) \approx 62\text{cm}^2$

Qn 7
 Areas X + A → quadrant – small semi-circle
 → $\frac{\pi(14)^2}{4} - \frac{\pi(7)^2}{2} \approx 77.0\text{cm}^2$
 Areas Y + A → square - quadrant → $(14 \times 14) - \frac{\pi(14)^2}{4}$
 ≈ 42.1cm²
 Difference between X and Y → $77 - 42.1 \approx 35\text{cm}^2$

Chapter 4 Speed

Unit 4.1 - Journey by Parts

Qn 6
 To find the average speed for the whole journey, we must first find the total distance from Town A to B.
 Distance (1st 2h) → 24km/h x 2h = 48km
 $\frac{4}{5}$ Distance → 48km
 $\frac{1}{5}$ Distance → 12km
 Whole distance → 12km x 5 = 60km
 Average speed for whole journey → $\frac{60\text{km}}{3\text{h}} = 20\text{km/h}$

Unit 4.2 – Journey in Opposite Direction

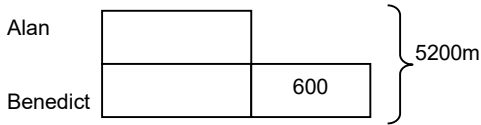
Qn 4
 Distance (Janet) → 80km/h x 2h = 160km
 Distance (Tommy) → 310km – 160km = 150km
 Speed (Tommy) → 150km ÷ 2 = 75km/h



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Qn 5

In 30 min, Benedict jogged $1.2\text{km} \times \frac{1}{2} = 600\text{m}$ more than Alan.



$$\begin{aligned} 2 \text{ Units} + 600 &= 5200 \\ 2 \text{ Units} &\rightarrow 5200 - 600 = 4600 \\ 1 \text{ Unit} &\rightarrow 4600 \div 2 = 2300\text{m} \\ \text{Speed (Alan)} &\rightarrow 2.3\text{km} \div \frac{1}{2} \text{ h} = 4.6\text{km/h} \end{aligned}$$

Unit 4.3 – Common Distance or Time

Qn 4

Speed (Yen Ming) : Speed (Leon) $\rightarrow 70 : 100 = 7 : 10$

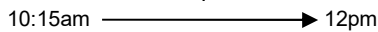
Time (Yen Ming) : Time (Leon) $\rightarrow 10 : 7$

Time difference $\rightarrow 3U \rightarrow \frac{3}{4} \text{ h}$

$$1U \rightarrow \frac{1}{4} \text{ h}$$

Time (Leon) $\rightarrow 7U \rightarrow 7 \times \frac{1}{4} \text{ h} = 1 \frac{3}{4} \text{ h}$

$$1 \frac{3}{4} \text{ h later}$$

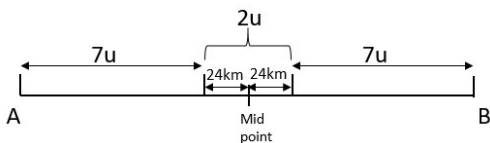


Qn 9

$S_C : S_L \rightarrow 72 : 56 \rightarrow 9 : 7$

When time is the same,

$D_C : D_L \rightarrow 9 : 7$



The car covered $(24\text{km} \times 2 = 48\text{km})$ more than the lorry from the time they left the towns to the time they passed each other

$$2U \rightarrow 48\text{km}$$

$$1U \rightarrow 24\text{km}$$

$$\text{Distance from A to B} \rightarrow 16U \rightarrow 16 \times 24 = 384\text{km}$$

Chapter 5 Simultaneous

Unit 5.1 – Simultaneous (Fraction of different quantities)

Qn 4

$$\left. \begin{aligned} \frac{1}{4} \text{ circle} + \frac{1}{3} \text{ rectangle} &\rightarrow \frac{2}{5} \text{ square} \end{aligned} \right\} \times 3$$

$$\frac{3}{4} \text{ circle} + \text{rectangle} \rightarrow \frac{6}{5} \text{ square}$$

$$\text{Circle} + \text{rectangle} \rightarrow \frac{7}{5} \text{ square}$$

$$\frac{1}{4} \text{ circle} \rightarrow \frac{1}{5} \text{ square}$$

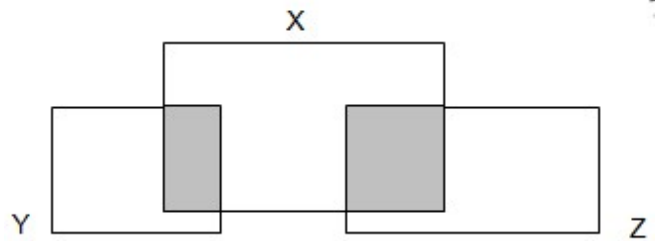
$$\text{Circle} : \text{Square} \\ 4 : 5$$

$$4U + \text{rectangle} \rightarrow \frac{7}{5} \times 5 = 7U$$

$$\text{Rectangle} \rightarrow 3U$$

$$\text{Circle} : \text{Square} : \text{Rectangle} \\ 4 : 5 : 3$$

Qn 6



$$\begin{aligned} Z : X \\ 5 : 12 \end{aligned}$$

$$Y + 5U \rightarrow \frac{3}{4} (12U)$$

$$Y \rightarrow 4U$$

$$\left. \begin{aligned} \frac{1}{4} Y + \frac{1}{5} Z &\rightarrow \frac{1}{6} X \end{aligned} \right\} \times 4$$

$$Y + \frac{4}{5} Z \rightarrow \frac{4}{6} X$$

$$Y + Z \rightarrow \frac{3}{4} X$$

$$\frac{1}{5} Z \rightarrow \frac{1}{12} X$$

$$Z : X : Y$$

$$5 : 12 : 4$$

$$1U \rightarrow 24\text{cm}^2$$

$$\begin{aligned} \text{Total area of figure} &\rightarrow \text{Area } (X + Y + Z) - \text{Shaded Area} \\ &\rightarrow 5U + 12U + 4U - 2U = 19U \\ &\rightarrow 19 \times 24 = 456\text{cm}^2 \end{aligned}$$

Qn 8

$$\left. \begin{aligned} \frac{1}{2} \text{ girls} - \frac{1}{4} \text{ boys} &\rightarrow 120 \end{aligned} \right\} \times 2$$

$$\text{Girls} - \frac{2}{4} \text{ boys} \rightarrow 240$$

$$\text{Girls} + \text{Boys} \rightarrow 720$$

$$\text{Difference } \frac{4}{4} \text{ boys} + \frac{2}{4} \text{ boys} \rightarrow 720 - 240 = 480$$

$$\frac{6}{4} \text{ boys} \rightarrow 480$$

$$\frac{3}{2} \text{ boys} \rightarrow 480$$

$$\frac{1}{2} \text{ boys} \rightarrow 160$$

$$\text{Boys} \rightarrow 160 \times 2 = 320$$



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Chapter 6 Percentage

Unit 6.1 – Percentage

Qn 3

(a) Adults → 80%
Children → 20%

Female → 30% of 80% → $\frac{3}{10} \times 80\% = 24\%$

Male → 80% - 24% = 56%

Girls → 60% of 20% → $\frac{6}{10} \times 20\% = 12\%$

Boys → 20% - 12% = 8%

Boys - Girls → 12% - 8% = 4% of audience → 40
1% of audience → 10

Total 100% of audience → 1000 people.

(b) The number of children and men remained the same,

Children + male → 76% = 760

If 80% of remaining people → 760

1% of remaining people → 9.5

20% of remaining people → 9.5 x 20 = 190 women

Woman at first → 240

Women who left → 240 - 190 = 50

Qn 5

Fixed → 40% (2U) } → x 5 → 10U
Unfixed → 100% (5U) } → x 5 → 25U

Fixed → 80% (4U) } x 7 → 28U
Unfixed → 20% (1U) } x 7 → 7U

Transfer → 18U → 180 pieces

1U → 10 pieces

Total → 35U → 35 x 10 = 350 pieces

Qn 8

50% A → 30% B

$\frac{1}{2}$ A → $\frac{3}{10}$ B

$\frac{3}{6}$ A → $\frac{3}{10}$ B

A : B → 6 : 10

C is 50% of A + B

C → $\frac{1}{2} \times 16U \rightarrow 8U$

Removed $\frac{1}{4} \times 8U = 2U$ (in C)

A : B : C
6 : 10 : 6

4U → 12
1U → 3

No. of oranges in A → 6U → 6 x 3 = 12

Qn 10

Money → 25% + \$30 (book)
75% - \$30 remainder → 60% + \$20 (CD)
40% - \$20 (left)
\$64
40% remainder → \$20 + \$64 = \$84

Qn 10 (cont)

20% remainder → \$42

Remainder → \$42 x 5 = \$210

75% total - \$30 → \$210

75% total → \$240

25% total → \$80

Total → \$80 x 4 = \$320

Qn 12

Jenny → 80%

Daryl → 100%

Jenny left → 80% of 80% → 64%

Daryl (end) → 64% x 2 = 128%

Increase (Daryl) → 28% of cards → 56

1% of cards → 2

Jenny at first → 80% → 80 x 2 = 160 pieces

Qn 13

Red → 120% (6U) } x 3 → 18U
Blue → 100% (5U) } → 15U

Red → 90% (9U) } x 2 → 18U
Green → 100% (10U) } → 20U

	No.	x	Value	Total
Red	18U	x	2	→ 36U
Green	20U	x	5	→ 100U
Blue	15U	x	3	→ 45U
Total				→ 181U = 724
				1U → 4

Red balls → 18U → 18 x 4 = 72

Qn 14

At first Jason : Susan
Change x 5 { 75% } 3U : 4U } 100%
End (120%) 5 x 6p : 5p x 6 (100%)

Jason	15U	240
Susan	24U	24

9U → 240 - 24 = 216

1U → 24

Jason at first → 3U → 3 x 24 = 72

Unit 8.1 – Algebra

Qn 7

(a) = $\frac{x}{4}$ cm

Total perimeter → 12U → X cm

1U → $\frac{x}{12}$ cm

Shortest length → 3U → $3 \times (\frac{x}{12}) = \frac{x}{4}$ cm

(b) Since X = 24cm; Shortest = 6cm

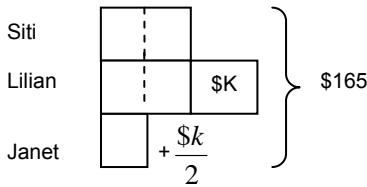
2nd shortest → 4U → $4 \times (\frac{24}{12}) \rightarrow 8$ cm

Area of triangle → $\frac{1}{2} \times 6 \times 8 = 24$ cm²



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Qn 9



$$5 \square + \frac{3k}{2} \rightarrow 165$$

$$5 \square \rightarrow 165 - \frac{3k}{2}$$

$$\square \rightarrow \frac{330 - 3k}{10}$$

$$\text{Siti} \rightarrow 2 \square \rightarrow 2 \left(\frac{330 - 3k}{10} \right) \rightarrow \frac{330 - 3k}{5}$$

$$K = 8, \text{ Siti} \rightarrow \frac{330 - 3(8)}{5} = \$61.20$$

Unit 9.1 – Revision of Key Constructs

Qn 12

Case 1 : + 10 red beads

Ratio Red : Blue
2 : 3

Case 2 : +10 red beads + 30 blue beads

1 : 3 (x2)
2 : 6

Blue changed by 3 units → 3u → 30 beads
1u → 10 beads

Red beads → 2units → 2 x 10 beads = 20 beads
Number of beads → 20 - 10 = 10 beads

Qn 13

80% male = 90% female

$$\frac{8}{10} \text{ male} = \frac{9}{10} \text{ female}$$

$$\frac{72}{90} \text{ male} = \frac{72}{80} \text{ female}$$

Total → 90U + 80U = 170U

170 U → 170 members

1U → 1 member

Total this year → 144U → 144 members

Qn 16

$$\$834 - \$66 = \$768$$

$$\$768 \div 2 = \$384$$

$$\text{Pants} \rightarrow \$384 + \$66 = \$450$$

$$\text{Shirts} \rightarrow \$384$$

3U of pants cost \$450

4U of shirts cost \$384

1U of pants cost \$150

1U of shirts cost \$96

$$\text{Difference in 1U} \rightarrow \$54$$

$$\text{No. of items in 1U} \rightarrow \$54 \div 9 = 6$$

$$\text{Total shirt + pants bought} \rightarrow 7U \times 6 = 42$$

Online Solutions for P6 ThinkingMath@onSponge (Updated on 16 April 2011)

Qn 17

Item	No. of Boxes	x	Item	Total
Blue	Red + 12	x	120	120Red + 1440
Red	Red	x	150	150Red

Comparing the total of items (plates vs cups)

Cups → Plates + 120

$$150 \text{ Red} \rightarrow 120 \text{ Red} + 1440 + 120$$

$$30 \text{ Red} \rightarrow 1560$$

$$\text{Number of Red boxes} \rightarrow 1560 \div 30 = 52$$

$$\text{Number of Blue boxes} \rightarrow 52 + 12 = 64$$

$$\text{Total Plates} \rightarrow 64 \times 120 = 7680$$

Qn 18

$$\frac{1}{3} \text{ Lim} = \frac{3}{4} \text{ Zhang}$$

$$\frac{3}{9} \text{ Lim} = \frac{3}{4} \text{ Zhang}$$

$$5 \times \left\{ \begin{array}{l} \text{Lim} : \text{Zhang} \\ 9\text{U} : 4\text{U} \\ - 150 : + 50 \\ 6\text{p} : 5\text{p} \end{array} \right\} \times 6$$

Lim	45U		
Zhang	24U	300	750

$$(45 - 24)\text{U} \rightarrow 21\text{U} \rightarrow 1050$$

$$1\text{U} \rightarrow 50$$

$$\text{Total ducks} \rightarrow 13\text{U} \rightarrow 13 \times 50 = 650$$

Qn 19

$$\text{Total shaded area} = \frac{1}{2} \times 20 \times 17 \times 4 = 680\text{cm}^2$$

Since AB = BE but AB = BC

$$\text{Therefore EB} = \text{BC} = \text{CF} = 60 \div 3 = 20\text{cm}$$

Qn 24

(a) No. of shaded tiles = 20
No. of plain tiles = 16

(b) Shaded 8 + 8 (4) = 40
Plain 9 x 9 = 81
Total → 40 + 81 = 121

Qn 25

Assume all delivered successfully,

$$\text{Total earned} \rightarrow \$25 \times 500 = \$12500$$

$$\text{Amount refunded} \rightarrow \$12500 - \$9500 = \$3000$$

$$\text{No. of parcels damaged} \rightarrow \$3000 \div (\$25 + \$15) = 75$$

$$\text{No. of parcels delivered successfully} \rightarrow 500 - 75 = 425 \text{ parcels}$$



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Qn 49 -48 +240 (left)

Calvin	2U (gave)	10U (left)	288
Elizabeth	9U (gave)	3u (left)	

Left behind

Calvin	10U	240
Elizabeth	3U	← 324 →

$$\frac{1}{6} = \frac{2}{12}$$

$$\frac{3}{4} = \frac{9}{12}$$

$$\frac{1}{6} \times 288 = 48$$

$$7U \rightarrow 84$$

$$1U \rightarrow 12$$

$$\text{Total sweets Calvin had at first} \rightarrow 12U + 288$$

$$\rightarrow 12 \times 12 + 288 = 432$$

Sample Examination Paper 2 – Booklet B

12. $S_1 : S_2$ $T_1 : T_2$
 $10 : 12$ $6 : 5$
 $5 : 6$

$$11U \rightarrow 55\text{min}$$

$$1U \rightarrow 5\text{ min}$$

$$T_1 (\text{home to nearby park}) \rightarrow 6U \rightarrow 6 \times 5 = 30\text{min}$$

16.

$$\frac{\text{Elias}}{5 \times \left\{ \begin{array}{l} (30\%) 3U \\ +50 \end{array} \right\}} : \frac{\text{Roy}}{5 \times \left\{ \begin{array}{l} 10U (100\%) \\ +25 \end{array} \right\}} \times 4$$

$$5 \times (80\%) 4p : 5p (100\%) \times 4$$

Elias	15U	250
Roy	40U	100

$$25U \rightarrow 150$$

$$1U \rightarrow 150 \div 25 = 6$$

$$\text{Elias at first} \rightarrow 3U \rightarrow 3 \times 6 = 18$$