

# Bronze Level

## Model Answers 7

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Difficulty Level	Bronze
Booklet	Model Answers 7

**Time Allowed:** 58 minutes

**Score:** / 48

**Percentage:** /100

1 (a) Expand  $6(3a - 2b + c)$

$$6(3a) - (6)(2b) + (6)(c)$$
$$18a - 12b + 6c$$

$$\frac{18a - 12b + 6c}{\dots\dots\dots}$$

(1)

(b) Factorise  $t^2 - 10t$   
Take a factor of  $t$  out side the brackets

$$t(t - 10)$$

$$\frac{t(t - 10)}{\dots\dots\dots}$$

(2)

(c) Solve  $x = \frac{7 - 2x}{3}$

Show clear algebraic working.

Multiply by 3

$$3(x) = 7 - 2x$$

Add  $2x$  to both sides

$$5x = 7$$

$$x = \frac{7}{5} = \underline{\underline{1.4}}$$

$$x = \frac{\underline{\underline{1.4}}}{\dots\dots\dots}$$

(3)

(Total for Question is 6 marks)

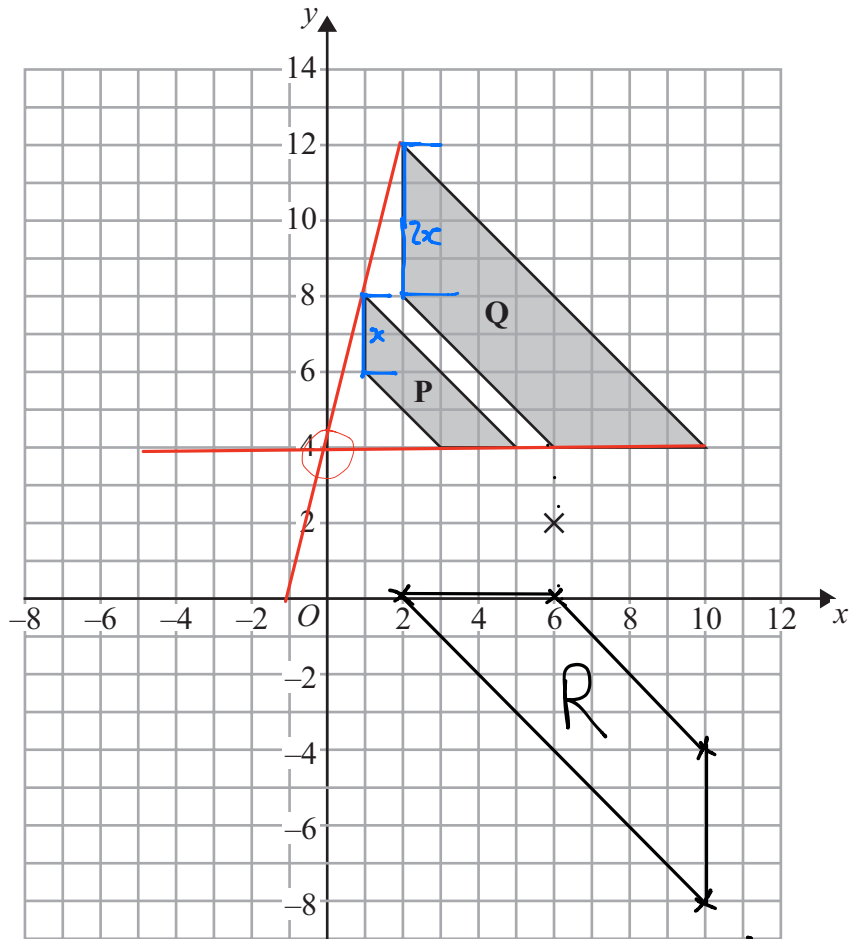
2 Show that  $\frac{4}{9} - \frac{1}{6} = \frac{5}{18}$

Lowest common denominator is 18

$$\frac{8}{18} - \frac{3}{18} = \frac{5}{18} \text{ QED}$$

(Total for Question is 2 marks)

3



(a) Describe fully the single transformation that maps shape **P** onto shape **Q**.

Enlargement about point  $0,4$  of scale factor  $2$

(3)

(b) On the grid, rotate shape **Q**  $180^\circ$  about the point  $(6, 2)$ .  
Label the new shape **R**.

(2)

(Total for Question is 5 marks)

- 4 A box contains four different kinds of chocolates.  
Debbie takes at random a chocolate from the box.  
The table shows the probability of Debbie taking an Orange or a Coffee or a Caramel chocolate.

Chocolate	Probability
Orange	0.15
Coffee	0.40
Caramel	0.35
Strawberry	

- (a) Work out the probability that Debbie takes a Strawberry chocolate.

Total probability must equal 1

$$1 = 0.15 + 0.40 + 0.35 + x$$

$$1 - (0.15 + 0.40 + 0.35) =$$

0.1

(2)

- (b) Work out the probability that Debbie takes an Orange chocolate or a Coffee chocolate.

Probability of orange + coffee as she can pick either

$$\text{Probability} = 0.4 + 0.15 = 0.55$$

0.55

(2)

**(Total for Question is 4 marks)**

- 5 Green paint can be made by mixing yellow paint and blue paint in the ratio 2 : 3  
Wendy makes 15 litres of green paint.

Work out how many litres of blue paint Wendy uses.

Every 5 litres of paint uses 2 litres of green and 3 litres of blue

15 litres used in total, therefore 3 x 3 litres of blue paint are used

9 litres of blue paint are used

9 ..... litres

**(Total for Question is 2 marks)**

- 6 Yoko flew on a plane from Tokyo to Sydney.  
The plane flew a distance of 7800 km.  
The flight time was 9 hours 45 minutes.

Work out the average speed of the plane in kilometres per hour.

Avg speed = displacement/ time

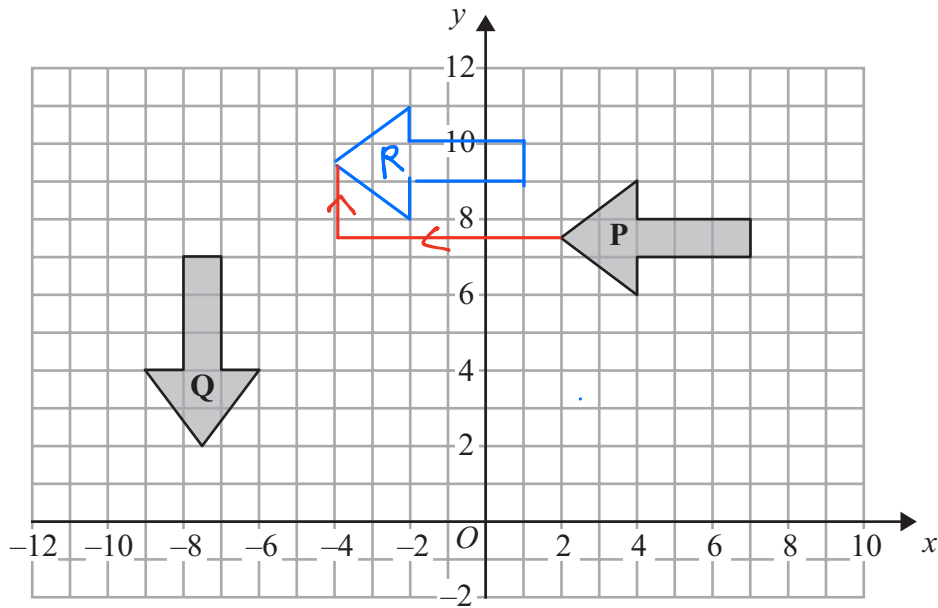
9 hours 45 minutes = 9.75 hours

So avg speed in km per hour is  $7800 / 9.75 = 800$

..... 800 ..... km/h

(Total for Question is 3 marks)

7



- (a) Describe fully the single transformation that maps shape **P** onto shape **Q**.

Rotation of 90 degrees anticlockwise  
About (0,0)

(3)

- (b) On the grid, translate shape **P** by the vector  $\begin{pmatrix} -6 \\ 2 \end{pmatrix}$  6 left 2 up  
Label the new shape **R**.

(2)

(Total for Question is 5 marks)

8 (a) Show that  $\frac{7}{8} - \frac{5}{6} = \frac{1}{24}$

Both fractions must have a the same denominator. Lowest common denominator is 24

$$\frac{7}{8} \times \frac{3}{3} = \frac{21}{24} \qquad \frac{5}{6} \times \frac{4}{4} = \frac{20}{24}$$

$$\frac{21}{24} - \frac{20}{24} = \frac{1}{24} \qquad (2)$$

(b) Show that  $\frac{5}{8} \div \frac{7}{12} = 1\frac{1}{14}$

Dividing is the same as multiplying by the reciprocal

$$\begin{aligned} \therefore \div \frac{7}{12} &= \times \frac{12}{7} \\ \rightarrow \frac{5}{8} \times \frac{12}{7} &= \frac{60}{56} = \frac{15}{14} = \underline{\underline{1\frac{1}{14}}} \end{aligned}$$

(2)

(Total for Question is 4 marks)

9 Solve  $7y - 6 = 2y + 8$

Show clear algebraic working.

Take y on to one side

$$7y - 2y - 6 = 8$$

Add 6 to both sides

$$5y = 8 + 6$$

$$5y = 14$$

$$y = 14/5$$

$$y = \underline{\underline{14/5}}$$

(Total for Question is 3 marks)

10 Express 204 as a product of its prime factors.

2 is the smallest prime factor  
 $2 \times 102 = 2 \times 2 \times 51$

3 is next smallest  
 $2 \times 2 \times 3 \times 17$

17 is prime

Therefore prime factors are : 2,2,3,17

.....  
 $2 \times 2 \times 3 \times 17$

**(Total for Question is 3 marks)**

11 There are 20 students in a class.  
12 of the students are girls.

Find the ratio of the number of girls to the number of boys.  
Give your ratio in the form  $n : 1$

Boys + girls = total number of student  
Therefore there are 8 boys

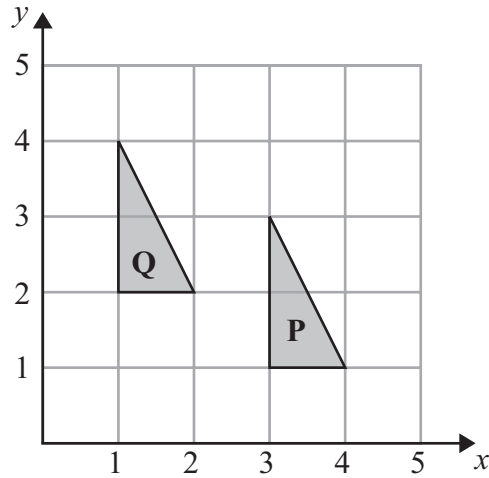
Girls : boys  
12 : 8  
12/8 : 1  
1.5 : 1

.....  
1.5 : 1

**(Total for Question is 2 marks)**



12



Describe fully the single transformation which maps triangle P onto triangle Q.

Translation by two left and one up or

$$\begin{pmatrix} -2 \\ 1 \end{pmatrix}$$

(Total for Question is 2 marks)

13 (i) Solve the inequalities  $3 \leq x + 4 < 7$

Subtract 4 from all values

$$-1 \leq x < 3$$

$$-1 \leq x < 3$$

(ii)  $n$  is an integer.

Write down all the values of  $n$  which satisfy  $3 \leq n + 4 < 7$

From I)

$$-1 \leq x < 3$$

So  $x$  can be  $-1, 0, 1, 2$  but I cannot be  $3$  as  $x$  is less than not equal too  $3$

$$-1, 0, 1, 2$$

(Total for Question is 4 marks)

14

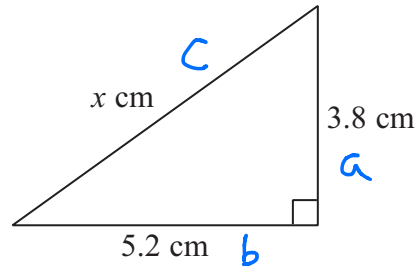


Diagram **NOT** accurately drawn

Calculate the value of  $x$ .

Give your answer correct to 3 significant figures.

Pythagoras :  $a^2 + b^2 = c^2$   
 $3.8^2 + 5.2^2 = c^2$   
 $41.48 = c^2$   
 $c = \sqrt{41.48} \approx 6.44$

$x = \underline{\underline{6.44}}$

(Total for Question is 3 marks)