Bronze Level

Model Answers 10

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Difficulty Level	Bronze
Booklet	Model Answers 10

Time Allowed: **56 minutes**

Score: **/ 46**

Percentage: **/100**

1 (a) Show that $\frac{4}{5} + \frac{2}{3} = 1\frac{7}{15}$

Multiply by $\frac{3}{3}$ and by $\frac{5}{5}$

$\frac{3}{3} \times \frac{4}{5} + \frac{5}{5} \times \frac{2}{3}$

$\frac{12}{15} + \frac{10}{15} = \frac{22}{15} = 1\frac{7}{15}$

(2)

(b) Show that $2\frac{1}{4} \div 3\frac{1}{2} = \frac{9}{14}$

$\frac{9}{4} \div \frac{7}{2}$ Inverse faction multiplied is equivalent to division

$\frac{9}{4} \times \frac{2}{7}$

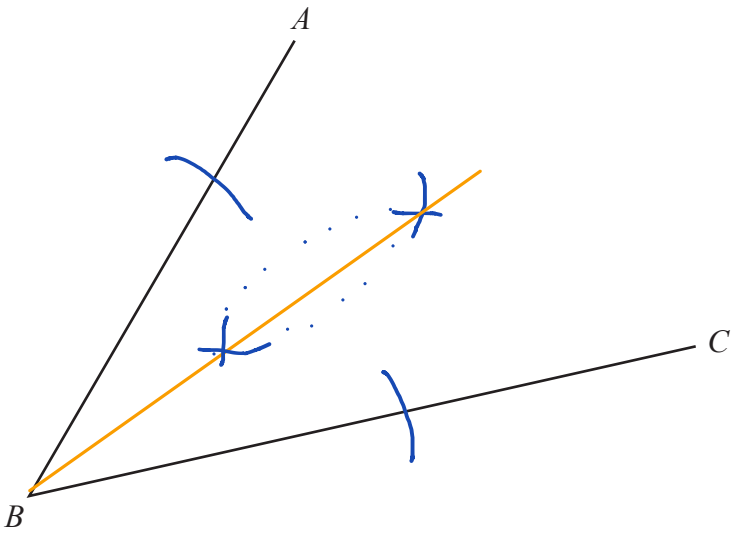
$\frac{18}{28} = \frac{9}{14}$

(3)

(Total for Question is 5 marks)

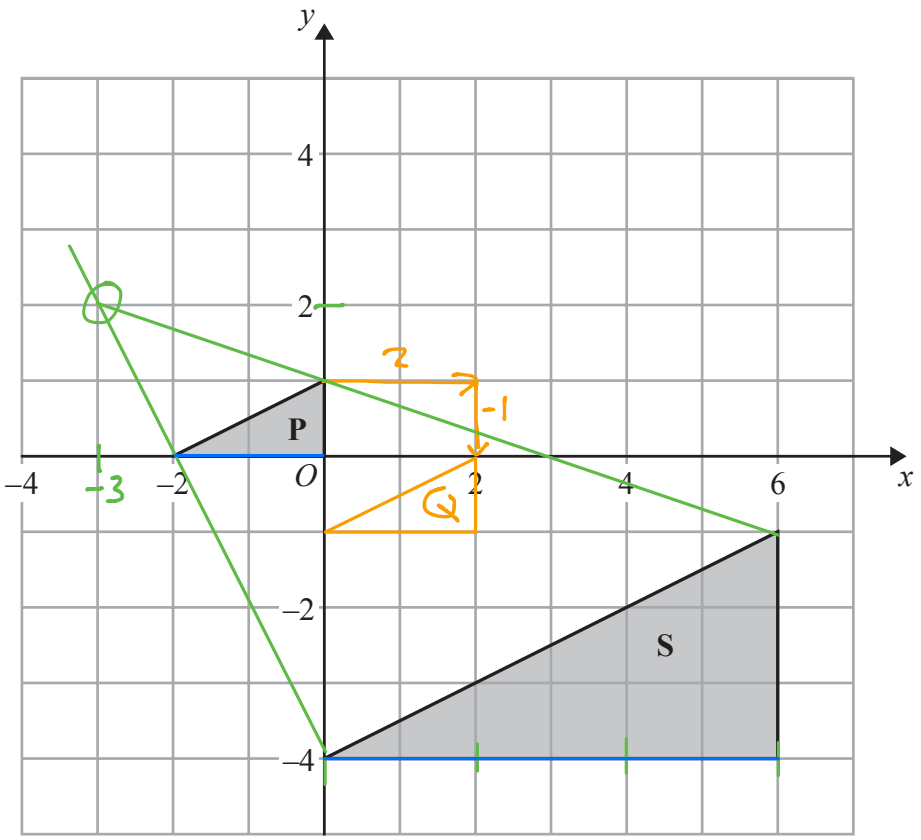
2 Use ruler and compasses to construct the bisector of angle *ABC*.

You must show all of your construction lines.



(Total for Question is 2 marks)

3



(a) On the grid, translate triangle **P** by the vector $\begin{pmatrix} 2 \\ -1 \end{pmatrix}$

Label the new triangle **Q**.

(1)

(b) Describe fully the single transformation that maps triangle **P** onto triangle **S**.

Englargement about (-3,2) of a scale factor of 3

(3)

(Total for Question is 4 marks)

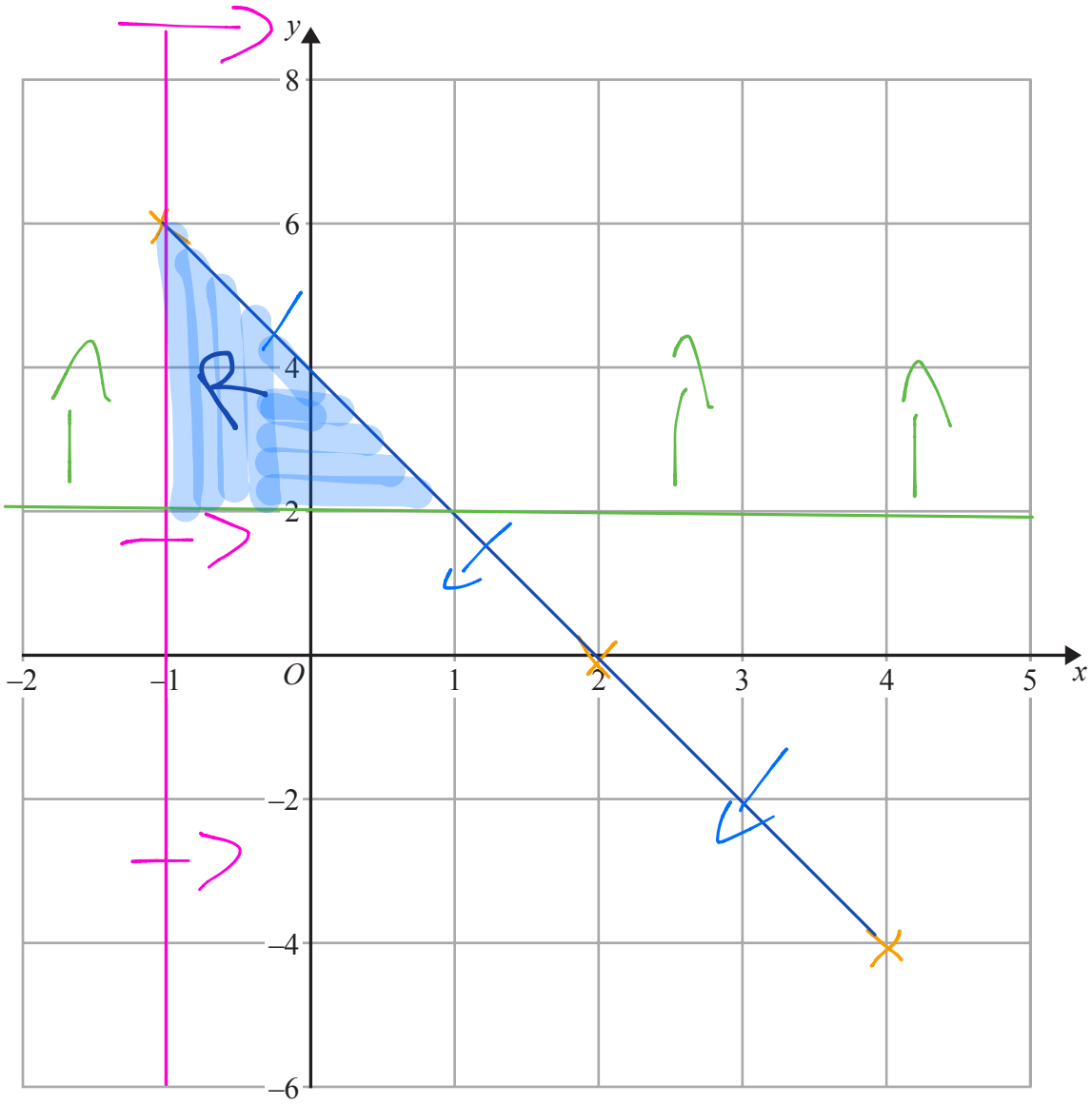
4 (a) Complete the table of values for $2x + y = 4$

x	–1	2	4
y	6	0	-4

(2)

(b) On the grid, draw the graph of $2x + y = 4$ for values of x from –1 to 4

(2)



(c) Show, by shading on the grid, the region which satisfies **all three** of the inequalities

$x \geqslant -1$, $y \geqslant 2$ and $2x + y \leqslant 4$

Label the region **R**.

(2)

(Total for Question is 6 marks)

5 (a) Work out the value of $\dfrac{13.8 \times 6.5}{7 + \sqrt{2}}$

Write down all the figures on your calculator display.

$\dfrac{89.7}{8.41\ldots} = 10.66053284\ldots$

10.66053284

(2)

(b) Give your answer to part (a) correct to 3 significant figures.

10.7

(1)

(Total for Question is 3 marks)

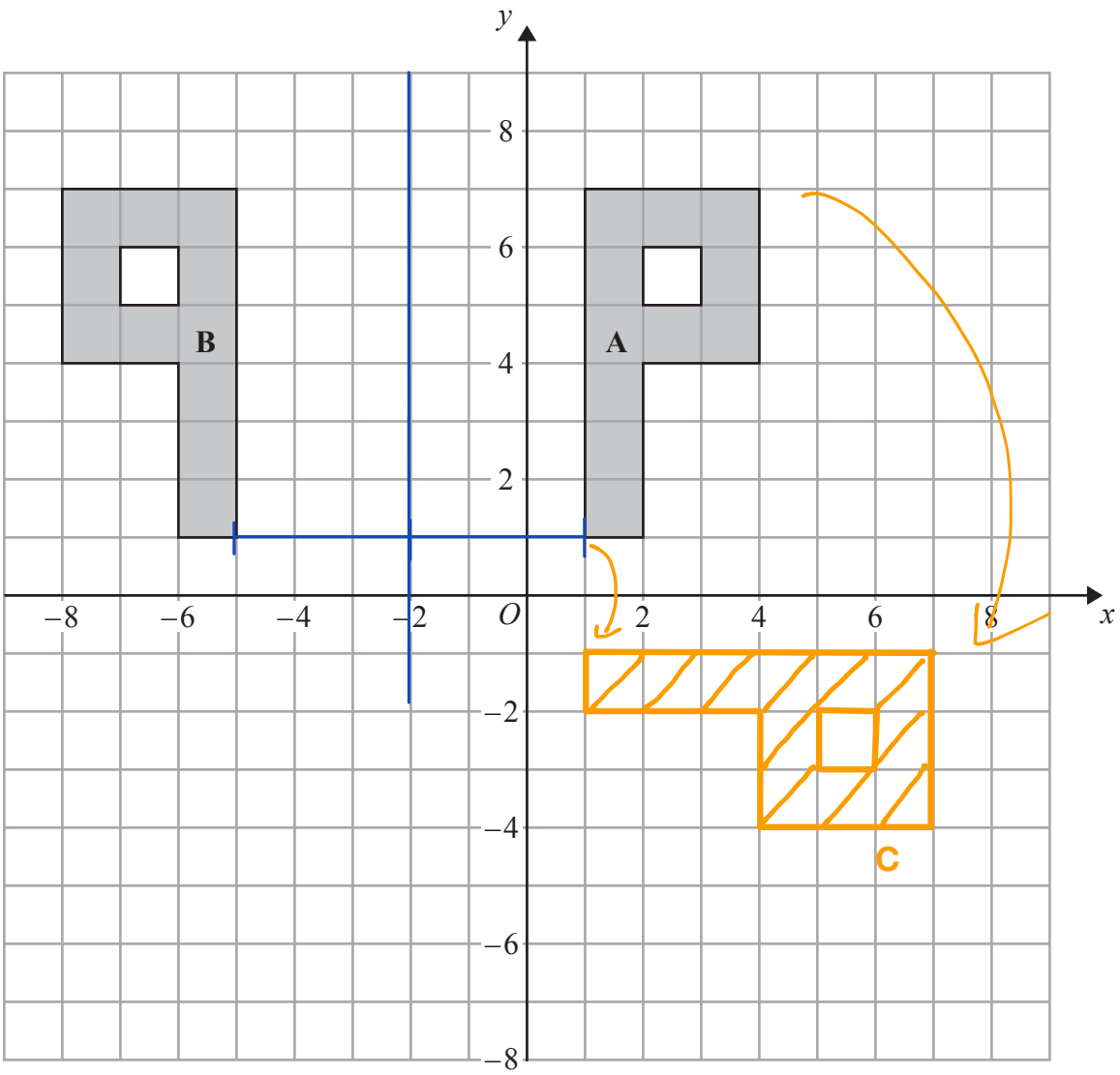
6 Show that $\dfrac{4}{9} \div \dfrac{5}{6} = \dfrac{8}{15}$

Division is equivalent to multiplication by the reciprocal

$\dfrac{4}{9} \times \dfrac{6}{5} = \dfrac{24}{45} = \dfrac{8}{15}$

(Total for Question is 2 marks)

7



(a) Describe fully the single transformation that maps shape **A** onto shape **B**.

Reflection in the line x = -2

(2)

(b) On the grid, rotate shape **A** 90° clockwise about the origin *O*.
Label the new shape **C**.

(2)

(Total for Question is 4 marks)

8 (a) Simplify $8d \times 7d$

$8 \times 7 \times d \times d$

$56d^7$

$56d^2$

(1)

(b) Expand $4(3e - 5)$

12e -20

12e -5

(1)

(c) Factorise $f^2 - 2f$

Take out a factor of f

f (f - 2)

f(f-2)

(2)

(d) $H = g^3 + 6g$

Work out the value of H when $g = 2$

Substitue 2 into equation H

2x2x2 + 6(2) = 8 +12 = 20

$H =$ 20

(2)

(Total for Question is 6 marks)

9 (a) A = {p, r, a, g, u, e}

B = {p, a, r, i, s}

C = {b, u, d, a, p, e, s, t}

List the members of the set

(i) $A \cap B$

p,r,a

(ii) $B \cup C$

All distinct members of sets b and c

p,a,r,i,s,b,u,d,e,t

(2)

(b) D = {r, o, m, e}

E = {l, i, s, b, o, n}

F = {b, e, r, l, i, n}

Put one of the letters D, E or F in the box below to make the statement correct.

$$A \cap \boxed{E} = \varnothing$$

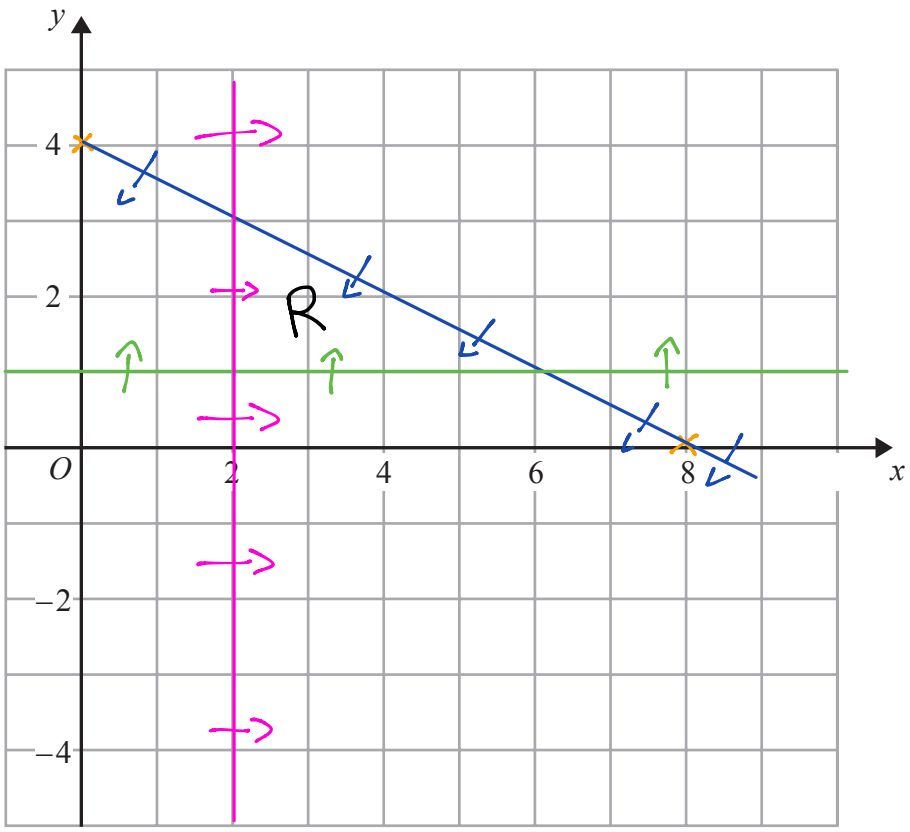
Explain your answer.

No common letters in Prague and Lisbon

(1)

(Total for Question is 3 marks)

10 (a) On the grid, draw the line with equation $x + 2y = 8$ for values of x from 0 to 9



(2)

(b) Show, by shading on the grid, the region defined by all three inequalities

$x + 2y \leqslant 8$

$x \geqslant 2$

$y \geqslant 1$

Label your region **R**.

(3)

(Total for Question is 5 marks)

11 (a) Complete the table to show each number written correct to 1 significant figure.

Number	42.37	58.92	21.04
Number written correct to 1 significant figure	40	60	20

(2)

(b) Use the approximations in part (a) to work out an estimate for the value of

$$\frac{42.37 + 58.92}{21.04}$$

Show clearly how you obtain your answer.

Subustiue in the rounded values

$$\frac{40 + 60}{20} = 5$$

5

(2)

(Total for Question is 4 marks)

12 $\mathscr{E}$ = {1, 2, 3, 4, 5, 6, 7, 8, 9}
A = {1, 3, 5, 7}
B = {2, 4, 6, 8}

(a) Explain why $A \cap B = \varnothing$

No numbers are in both set a and set b

(1)

$x \in \mathscr{E}$ and $x \notin A \cup B$

(b) Write down the value of x.

9 isn't in set a or b

$x =$ 9

(1)

$A \cap C = \{3, 7\}$, $B \cap C = \{8\}$ and $A \cup B \cup C = \mathscr{E}$

(c) List all the members of C.

All values must be included over a,b & c.
Neither A nor b include 9 so c must include 9.
C includes 3,7
C includes 8
Therefore c includes 3,7,8,9

3,7,8,9

(2)

(Total for Question is 4 marks)