

Ratio and Algebra

For Pearson Edexcel GCSE Mathematics (1MA1) • Higher tier

Name _____

Total marks: **29**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

- 1** $a:b = 2:3$ and $a:c = 4:7$
Find $b:c$

.....
(2)

(Total for Question 1 is 2 marks)

- 2** $(3x + 2):(x + 4) = 5:3$
Find the value of x .

$x =$
(3)

(Total for Question 2 is 3 marks)

3 $\frac{x}{y} = \frac{3}{4}$

Find the value of $\frac{2x+y}{3x-y}$

.....
(3)

(Total for Question 3 is 3 marks)

4 (a) $\frac{c+2d}{3} = \frac{2c-d}{2}$

Find the ratio $c:d$

.....
(2)

(b) $(x+y)^2 = 3xy + 7y^2$ where x and y are both positive.
Find the ratio $x:y$

.....
(3)

(Total for Question 4 is 5 marks)

- 5 A bag contains black and white beads in the ratio 4:5
Some black beads are removed. The ratio becomes 2:5
12 black beads were removed.
How many beads are now in the bag?

.....
(4)

(Total for Question 5 is 4 marks)

- 6 The ratio $(x + 2y) : (x - y)$ is equivalent to $3 : k$
Show that $x = \frac{y(2k + 3)}{3 - k}$

(3)

(Total for Question 6 is 3 marks)

- 7** Ines and Mateo share some money in the ratio 5:3
 Ines then gives £40 of her money to Mateo.
 Mateo then spends £20
 The amounts of money Ines and Mateo now have are in the ratio 3:4
 How much money did Ines have at the start?

£
 (5)

(Total for Question 7 is 5 marks)

- 8** x and y are both positive.
 (a) $(x^2 + 5y^2) : (x^2 - y^2) = 7:5$
 Find the ratio $x:y$

.....
 (3)

- (b) Given also that $x + y = 25$, find the value of x .

$x =$
 (1)

(Total for Question 8 is 4 marks)
