

1MA1 Foundation themed papers: Ratio and Proportion

Write your name here			
Surname	Other names		
Centre Number		Candidate Number	
Pearson Edexcel Level 1/Level 2 GCSE (9–1)			
Mathematics			
Ratio and Proportion			
			Paper Reference 1MA1
You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.			Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is **44**. There are **15** questions.
- Questions have been arranged in an ascending order of mean difficulty, as found by all students in the June 2017–November 2019 examinations.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

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- 1 David has twice as many cousins as Becky.
Becky has twice as many cousins as Nishat.
Nishat has 6 cousins.
How many cousins does David have?

.....
(Total for Question 1 is 2 marks)

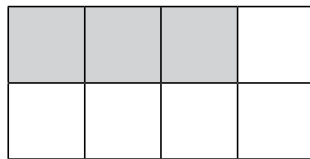


- 2 There are 60 people in a choir.
Half of the people in the choir are women.
The number of women in the choir is 3 times the number of men in the choir.
The rest of the people in the choir are children.
the number of children in the choir : the number of men in the choir = $n : 1$
Work out the value of n .
You must show how you get your answer.

$n =$
(Total for Question 2 is 4 marks)

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3 Here is a grid of squares.



Write down the ratio of the number of shaded squares to the number of unshaded squares.

.....
(Total for Question 3 is 1 mark)

4 The number of days, d , that it will take to build a house is given by

$$d = \frac{720}{n}$$

where n is the number of workers used each day.

Ali's company will take 40 days to build the house.

Hayley's company will take 30 days to build the house.

Hayley's company will have to use more workers each day than Ali's company.

How many more?

.....
(Total for Question 4 is 3 marks)

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- 5 There are 495 coins in a bottle.
 $\frac{1}{3}$ of the coins are £1 coins.
124 of the coins are 50p coins.
The rest of the coins are 20p coins.
Work out the total value of the 495 coins.

£.....

(Total for Question 5 is 4 marks)

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- 6** Tom and Adam have a total of 240 stamps.
The ratio of the number of Tom's stamps to the number of Adam's stamps is 3 : 7
Tom buys some stamps from Adam.
The ratio of the number of Tom's stamps to the number of Adam's stamps is now 3 : 5
How many stamps does Tom buy from Adam?
You must show all your working.

.....
(Total for Question 6 is 4 marks)

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7 A path is made of white tiles and grey tiles.

$\frac{1}{4}$ of the tiles are white.

(a) Write down the ratio of white tiles to grey tiles.

.....
(1)

There is a total of 56 tiles.

(b) Work out the number of grey tiles.

.....
(2)

(Total for Question 7 is 3 marks)

8 Write the ratio 4.5 : 2.25 in the form $n : 1$

.....
(Total for Question 8 is 1 mark)

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- 9** The ratio of the cost of one metre of cotton fabric to the cost of one metre of silk fabric is 2 : 5
Complete the table of costs.

	2 m	6 m	8 m	9 m
cotton fabric	£6			
silk fabric				

(Total for Question 9 is 3 marks)

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10 In a village

the number of houses and the number of flats are in the ratio 7 : 4

the number of flats and the number of bungalows are in the ratio 8 : 5

There are 50 bungalows in the village.

How many houses are there in the village?

.....
(Total for Question 10 is 3 marks)

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11 There are men and women at a meeting.

There are 28 women.

30% of the people at the meeting are men.

Work out the total number of people at the meeting.

.....
(Total for Question 11 is 3 marks)

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12 A shop sells packs of black pens, packs of red pens and packs of green pens.

There are

2 pens in each pack of black pens

5 pens in each pack of red pens

6 pens in each pack of green pens

On Monday,

number of packs of black pens sold : number of packs of red pens sold : number of packs of green pens sold = 7 : 3 : 4

A total of 212 pens were sold.

Work out the number of green pens sold.

.....
(Total for Question 12 is 4 marks)

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13 It would take 120 minutes to fill a swimming pool using water from 5 taps.

(a) How many minutes will it take to fill the pool if only 3 of the taps are used?

..... minutes
(2)

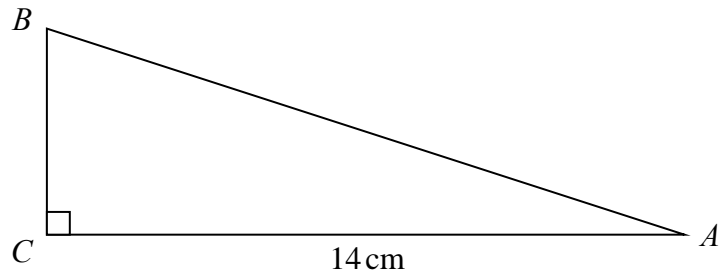
(b) State one assumption you made in working out your answer to part (a).

.....
.....
(1)

(Total for Question 13 is 3 marks)

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14 ABC is a right-angled triangle.



$AC = 14$ cm.
Angle $C = 90^\circ$

size of angle B : size of angle $A = 3 : 2$

Work out the length of AB .
Give your answer correct to 3 significant figures.

.....cm

(Total for Question 14 is 4 marks)

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- 15** There are only blue pens, green pens and red pens in a box.
The ratio of the number of blue pens to the number of green pens is 2 : 5
The ratio of the number of green pens to the number of red pens is 4 : 1
There are less than 100 pens in the box.
What is the greatest possible number of red pens in the box?

.....
(Total for Question 15 is 3 marks)

TOTAL MARKS FOR PAPER: 44