

Answer ALL TWENTY FOUR questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Here are some integers where $a < b < c < d$

a b c d d d

The mode of the integers is 9

The median of the integers is 8

The range of the integers is 4

Work out the value of a , the value of b , the value of c and the value of d

$a =$

$b =$

$c =$

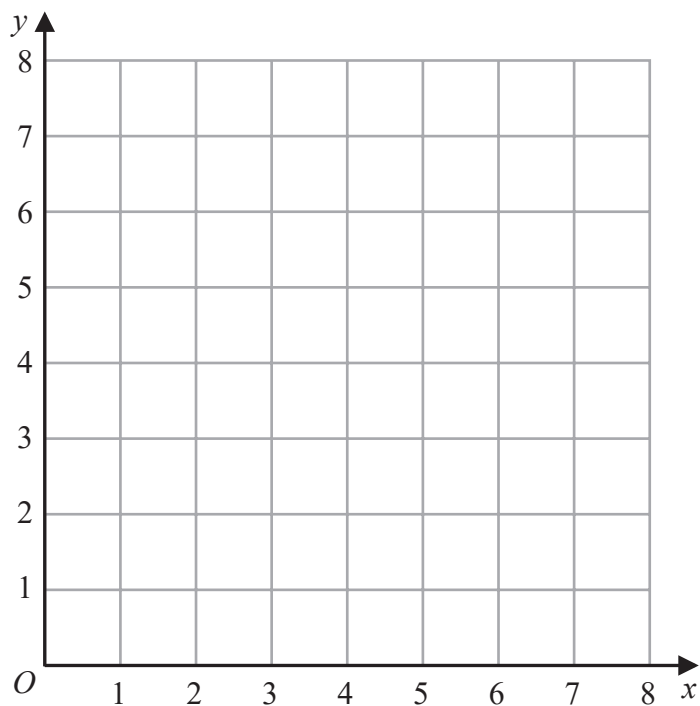
$d =$

(Total for Question 1 is 3 marks)



2 (a) On the grid, draw and label with its equation the straight line with equation

(i) $y = 1$ (ii) $x = 2$ (iii) $x + y = 7$



(3)

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

$y \geq 1$ $x \geq 2$ $x + y \leq 7$

Label the region **R**.

(1)

(Total for Question 2 is 4 marks)



- 3 An aeroplane travelled from New York City to Los Angeles.

The aeroplane travelled a distance of 3980 kilometres in 5 hours 24 minutes.

Work out the average speed of the aeroplane.

Give your answer in kilometres per hour correct to the nearest whole number.

..... kilometres per hour

(Total for Question 3 is 3 marks)

- 4 Show that $5\frac{1}{3} - 2\frac{6}{7} = 2\frac{10}{21}$

(Total for Question 4 is 3 marks)



5 The diagram shows an 8-sided shape $ABCDEFGH$.

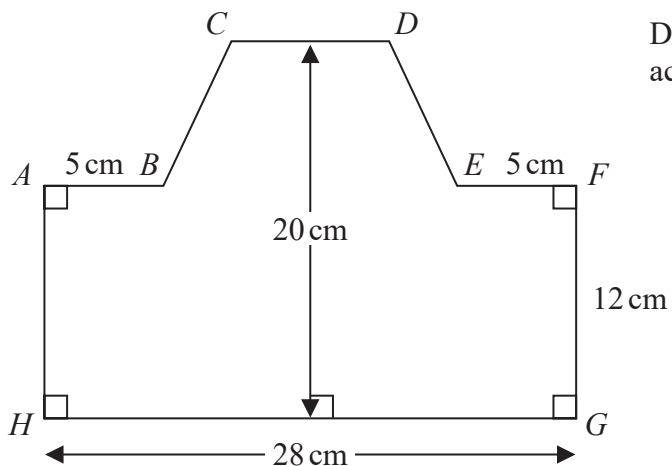


Diagram **NOT** accurately drawn

$HG = 28 \text{ cm}$ $FG = 12 \text{ cm}$ $AB = EF = 5 \text{ cm}$
 The height of the shape is 20 cm
 CD is parallel to HG

The area of shape $ABCDEFGH$ is 434 cm^2

Find the length of CD .

..... cm

(Total for Question 5 is 4 marks)



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6 The diagram shows triangle PQR .

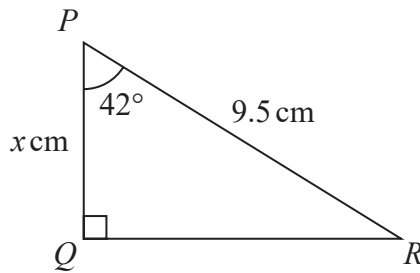


Diagram **NOT** accurately drawn

Work out the value of x
Give your answer correct to one decimal place.

$x =$

(Total for Question 6 is 3 marks)

7 Change a speed of 81 kilometres per hour to a speed in metres per second.

..... metres per second

(Total for Question 7 is 3 marks)



8 Behnaz makes 300 celebration cards so that

number of birthday cards : number of anniversary cards : number of congratulations cards = 7:5:3

$\frac{2}{5}$ of the birthday cards have numbers on them.

36% of the anniversary cards have numbers on them.

None of the congratulations cards have numbers on them.

Work out what fraction of the 300 cards have numbers on them.

Give your answer in its simplest form.

(Total for Question 8 is 5 marks)



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- 9 Pasha invests 50 000 dollars in a savings account for 4 years.
He gets 1.3% per year compound interest.

Work out how much money Pasha will have in his savings account at the end of 4 years.
Give your answer correct to the nearest dollar.

..... dollars

(Total for Question 9 is 3 marks)



P 6 8 7 9 8 R A 0 9 2 4

10 Solve the simultaneous equations

$$7x + 3y = 3$$

$$3x - y = 7$$

Show clear algebraic working.

$$x = \dots\dots\dots$$

$$y = \dots\dots\dots$$

(Total for Question 10 is 3 marks)

11 (i) Factorise $x^2 + 5x - 24$

.....
(2)

(ii) Hence, solve $x^2 + 5x - 24 = 0$

.....
(1)

(Total for Question 11 is 3 marks)

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