

17 There are 90 counters in a bag.

Each counter in the bag is either red or blue so that

the number of red counters : the number of blue counters = 2 : 13

Li is going to put some more red counters in the bag so that

the probability of taking at random a red counter from the bag is $\frac{1}{3}$

Work out the number of red counters that Li is going to put in the bag.

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(Total for Question 17 is 4 marks)



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18 $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$

$A = \{\text{odd numbers}\}$

$A \cap B = \{1, 3\}$

$A \cup B = \{1, 2, 3, 4, 5, 6, 7, 9, 11, 12\}$

Draw a Venn diagram to show this information.



(Total for Question 18 is 4 marks)



- 19 Calvin has 12 identical rectangular tiles. He arranges the tiles to fit exactly round the edge of a shaded rectangle, as shown in the diagram below.

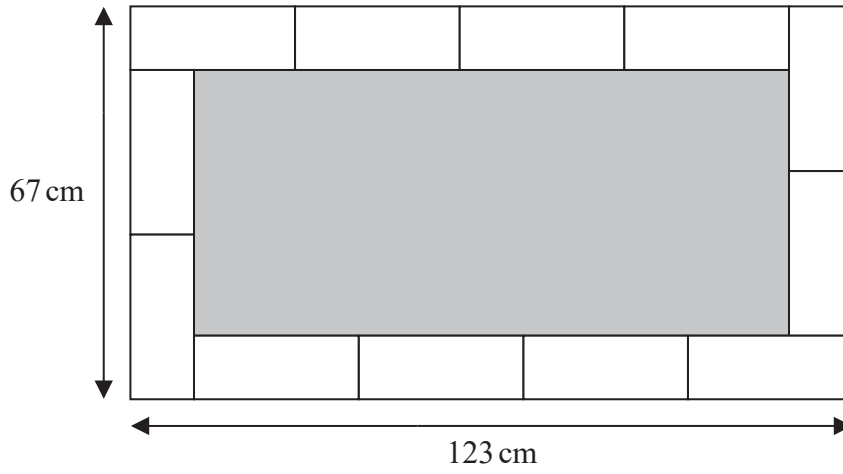


Diagram **NOT** accurately drawn

Work out the area of the shaded rectangle.

cm²

(Total for Question 19 is 5 marks)

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20 (a) Find the highest common factor (HCF) of 96 and 120

(2)

$$A = 2^3 \times 5 \times 7^2 \times 11$$

$$B = 2^4 \times 7 \times 11$$

$$C = 3 \times 5^2$$

(b) Find the lowest common multiple (LCM) of A , B and C .

(2)

(Total for Question 20 is 4 marks)

21 Jenny invests \$8500 for 3 years in a savings account.
She gets 2.3% per year compound interest.

How much money will Jenny have in her savings account at the end of 3 years?
Give your answer correct to the nearest dollar.

\$

(Total for Question 21 is 3 marks)



22 A block of wood has a mass of 3.5 kg.
The wood has density 0.65 kg/m^3

- (a) Work out the volume of the block of wood.
Give your answer correct to 3 significant figures.

(3) m^3

- (b) Change a speed of 630 kilometres per hour to a speed in metres per second.

(3) m/s

(Total for Question 22 is 6 marks)

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23 Solve the simultaneous equations

$$\begin{aligned}4x + 5y &= 4 \\ 2x - y &= 9\end{aligned}$$

Show clear algebraic working.

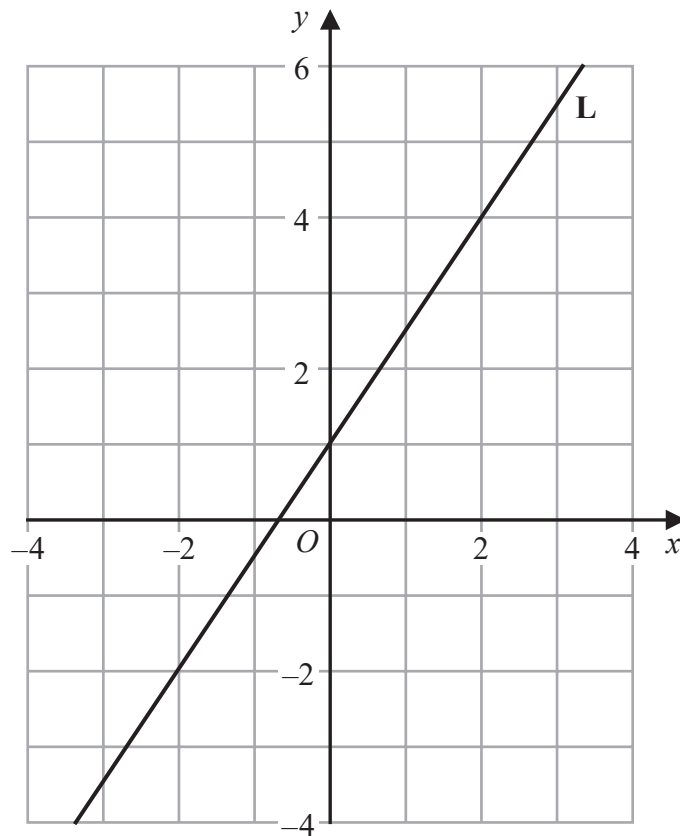
$$x =$$

$$y =$$

(Total for Question 23 is 3 marks)



24 The line **L** is drawn on the grid.



Find an equation for **L**.

(Total for Question 24 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

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