

DO NOT WRITE IN THIS AREA

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Answer ALL TWENTY THREE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Brendon, Asha and Julie share some money in the ratios 3 : 2 : 6
The **total** amount of money that Asha and Julie receive is \$36

Work out the amount of money that Brendon receives.

\$.....

(Total for Question 1 is 3 marks)

- 2 Show that $3\frac{1}{5} \times 2\frac{5}{8} = 8\frac{2}{5}$

(Total for Question 2 is 3 marks)



3 (a) Make a the subject of $d = g + 2ac$

.....
(2)

(b) Factorise fully $9ef - 12f$

.....
(2)

(c) Expand and simplify $(x + 2)(x - 5)$

.....
(2)

(d) Simplify fully $\frac{n^4 \times n^7}{n^5}$

.....
(2)

(Total for Question 3 is 8 marks)



4 $B = \{b, l, u, e\}$

$$G = \{g, r, e, y\}$$

$$W = \{w, h, i, t, e\}$$

(a) List all the members of the set

(i) $B \cup G$

(ii) $W \cap G'$

.....
.....
(2)

Serena writes down the statement $B \cap G \cap W = \emptyset$

(b) Is Serena's statement correct?

You must give a reason for your answer.

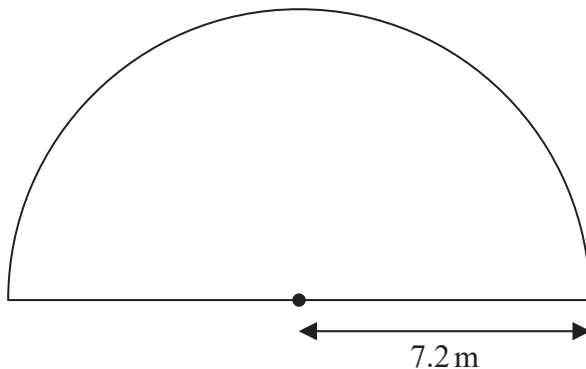
.....
.....
.....
(1)

(Total for Question 4 is 3 marks)



5 The diagram shows Yuen's garden.

Diagram **NOT**
accurately drawn



The garden is in the shape of a semicircle of radius 7.2 m.
Yuen is going to cover his garden with grass seed.

Yuen has 12 boxes of grass seed.
Each box of grass seed contains enough seed to cover 6 m^2 of the garden.

Has Yuen enough grass seed for his garden?
Show your working clearly.

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(Total for Question 5 is 3 marks)



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- 6 Solve $x^2 - 5x - 36 = 0$
Show clear algebraic working.

.....
(Total for Question 6 is 3 marks)

- 7 In a sale, the normal price of a hat is reduced by 15%
The sale price of the hat is 20.40 euros.
Work out the normal price of the hat.

..... euros
(Total for Question 7 is 3 marks)



8 5 children are playing on a trampoline.
The mean weight of the 5 children is 28 kg.

2 of the children get off the trampoline.
The mean weight of these 2 children is 26.5 kg.

Work out the mean weight of the 3 children who remain on the trampoline.

..... kg

(Total for Question 8 is 3 marks)

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9 Pablo made a solid gold statue.

He melted down some gold blocks and used the gold to make the statue.
Each block of gold was a cuboid, as shown below.

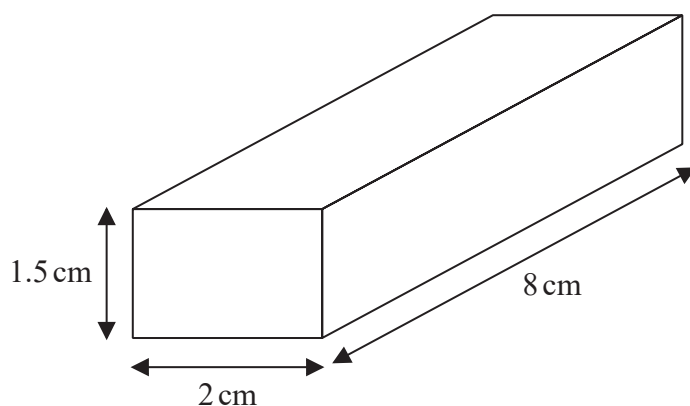


Diagram **NOT** accurately drawn

The mass of the statue is 5.73 kg.
The density of gold is 19.32 g/cm^3

Work out the least number of gold blocks Pablo melted down in order to make the statue.
Show your working clearly.

.....
(Total for Question 9 is 5 marks)



10 The diagram shows a regular hexagon, $ABCDEF$, and an isosceles triangle, GHI .

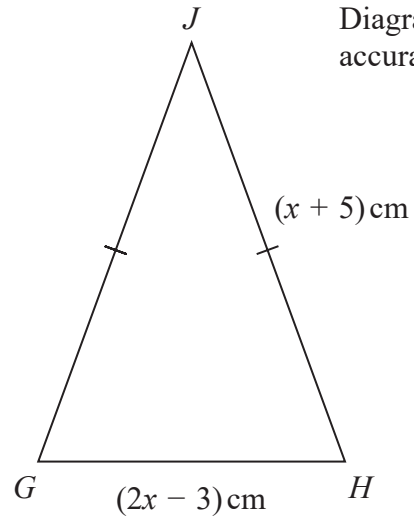
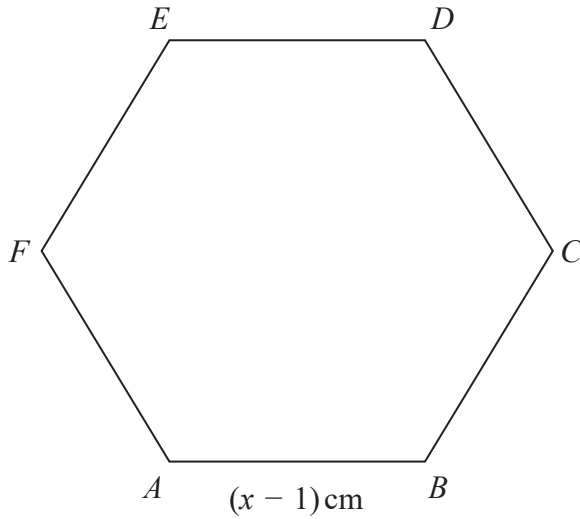


Diagram **NOT** accurately drawn

The perimeter of the hexagon is equal to the perimeter of the triangle.

Find the length of each side of the hexagon.
Show clear algebraic working.

..... cm

(Total for Question 10 is 5 marks)

