

17 $\mathcal{E} = \{11, 12, 13, 14, 15, 16, 17, 18, 19, 20\}$

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

$B = \{\text{multiples of 3}\}$

List the members of the set

(i) $A \cap B$

.....

(ii) $A \cup B$

.....

(iii) A'

.....

(Total for Question 17 is 3 marks)

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18 (a) Find the highest common factor (HCF) of 21 and 35

.....
(1)

(b) Write 720 as a product of its prime factors.
Show your working clearly.

.....
(3)

(c) Find the smallest whole number that 720 can be multiplied by to give a square number.

.....
(1)

(Total for Question 18 is 5 marks)



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19 Lorenzo increases all the prices on his restaurant menu by 8%

Before the increase, the price of a dessert was \$4.25

(a) Work out the price of the dessert after the increase.

\$
(3)

After the increase, the price of lasagne is \$9.45

(b) Work out the price of lasagne before the increase.

\$
(3)

(Total for Question 19 is 6 marks)



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20 The diagram shows isosceles triangle ABC .

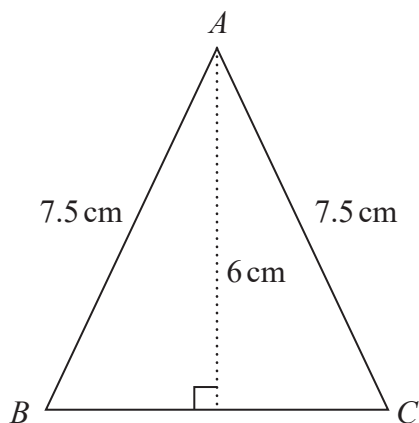


Diagram **NOT** accurately drawn

$AB = AC = 7.5 \text{ cm}$.

The height of the triangle is 6 cm .

Calculate the area of the triangle.

..... cm^2

(Total for Question 20 is 4 marks)



21 There are 10 people in a lift.
These 10 people have a mean weight of 79.2 kg.

3 of these people get out of the lift.
These 3 people have a mean weight of 68 kg.

Work out the mean weight of the 7 people left in the lift.

.....kg

(Total for Question 21 is 3 marks)

22 (a) Simplify $t^9 \div t^3$

.....
(1)

(b) Simplify $w^5 \times w^7$

.....
(1)

(c) Simplify $(5xy^2)^3$

.....
(2)

(Total for Question 22 is 4 marks)



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- 23 Change 22 metres per second to a speed in kilometres per hour.
Show your working clearly.

.....km/h

(Total for Question 23 is 3 marks)

- 24 3 years ago, the ratio of Tom's age to Clemmie's age was 2 : 7
Tom is now 15 years old and Clemmie is now x years old.

Find the value of x .

$x =$

(Total for Question 24 is 3 marks)



25

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

A box, in the shape of a cuboid, is going to be put on a table.

The whole of one face of the box will be in contact with the table.

The force exerted by the box on the table is always 105 newtons.

The box is 5 m by 4 m by 3 m.

The greatest pressure exerted by the box on the table is P newtons/m²

The least pressure exerted by the box on the table is Q newtons/m²

Work out the value of $P - Q$

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(Total for Question 25 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

