

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

14 The diagram shows a solid triangular prism $ABCDEF$.

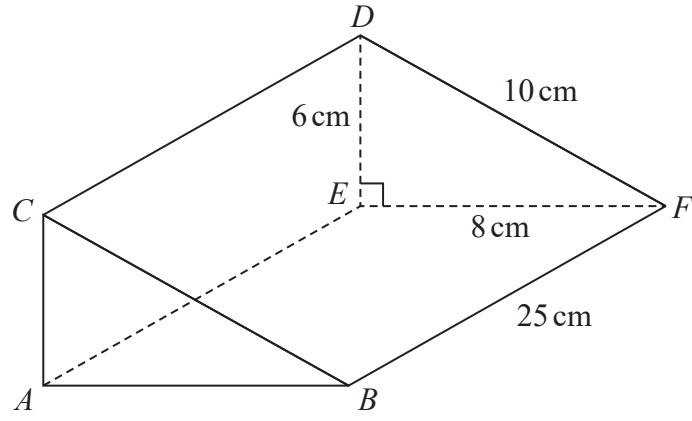


Diagram NOT accurately drawn

$EF = 8 \text{ cm}$, $DE = 6 \text{ cm}$, $DF = 10 \text{ cm}$ and $BF = 25 \text{ cm}$.
Angle $DEF = 90^\circ$

(a) Work out the area of triangle DEF .

..... cm^2
(2)

(b) Work out the volume of the prism.

..... cm^3
(2)

(c) Work out the total surface area of the prism.

..... cm^2
(3)

(Total for Question 14 is 7 marks)



15 The size of each exterior angle of a regular polygon is 24°

(a) Work out the number of sides of the polygon.

.....
(2)

Here is a pentagon.

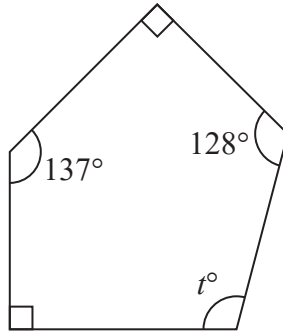


Diagram **NOT**
accurately drawn

(b) Work out the value of t .

.....
(3)

(Total for Question 15 is 5 marks)



- 16 $\mathcal{E} = \{\text{fish in Jake's lake}\}$
 $A = \{\text{fish of length greater than 20 cm}\}$
 $B = \{\text{fish that weigh more than 1 kg}\}$
 $C = \{\text{fish less than 1 year old}\}$

A fish in Jake's lake is caught.
 The fish is 2 years old, weighs 1.2 kg and is 19 cm in length.

- (a) Write down the set, A or B or C , of which this fish is a member.

.....
 (1)

- (b) Describe in words fish that are members of the set $A \cup B$

.....

 (2)

$$B \cap C = \emptyset$$

- (c) Explain what this statement tells us about the fish in Jake's lake.

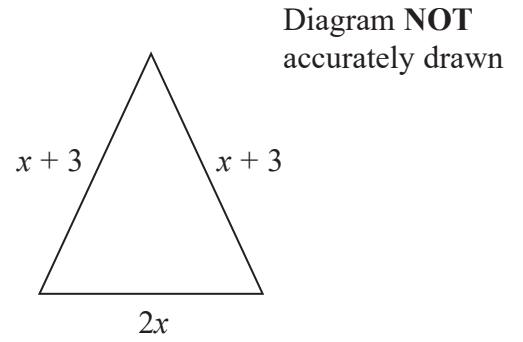
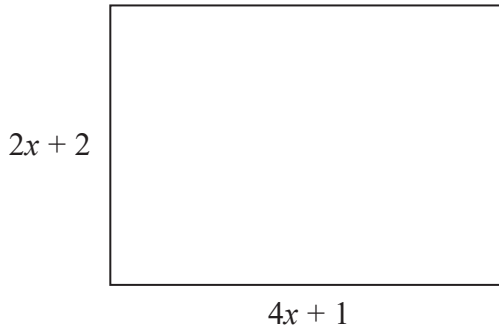
.....

 (1)

(Total for Question 16 is 4 marks)



17 The diagram shows a rectangle and an isosceles triangle.
All measurements are in centimetres.



(a) Write down an expression in terms of x for

(i) the perimeter of the rectangle,

.....cm

(ii) the perimeter of the triangle.

.....cm

(2)

The perimeter of the rectangle is equal to 2 times the perimeter of the triangle.

(b) Work out the value of x .
Show clear algebraic working.

.....
(4)

(Total for Question 17 is 6 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

18 Marta breeds dogs.
32 dogs give birth to puppies.
The table shows information about the number of puppies born to each dog.

Number of puppies	Frequency
1 – 3	5
4 – 6	12
7 – 9	10
10 – 12	4
13 – 15	1

(a) Write down the modal class.

.....
(1)

(b) Work out an estimate for the mean number of puppies born to each dog.

.....
(4)

(Total for Question 18 is 5 marks)



19 Show that $3\frac{3}{8} \div 2\frac{1}{4} = 1\frac{1}{2}$

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(Total for Question 19 is 3 marks)



20

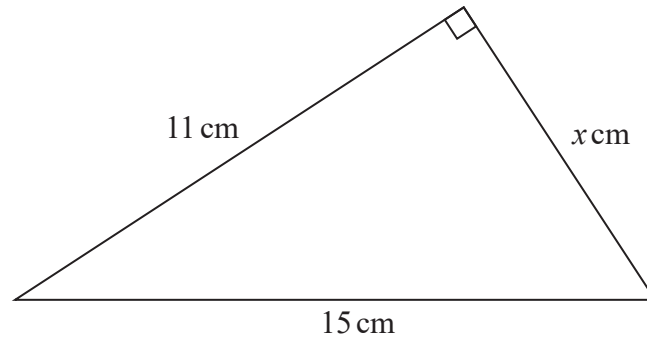


Diagram **NOT**
accurately drawn

Work out the value of x .
Give your answer correct to 3 significant figures.

.....
(Total for Question 20 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

