GCSE Grade 5

Maths Booklet 3

Paper 3H
Calculator

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1 Write $37\,cm^3$ in mm^3

..... mm^3

(Total for Question 1 is 1 mark)

2 Nimer was driving to a hotel.
He looked at his Sat Nav at 13 30

Time	13 30
Distance to destination	65 miles

Nimer arrived at the hotel at 14 48

Work out the average speed of the car from 13 30 to 14 48
You must show all your working.

..... mph

(Total for Question 2 is 4 marks)

3 (a) Write 32 460 000 in standard form.

.....

(1)

(b) Write 4.96×10^{-3} as an ordinary number.

.....

(1)

Asma was asked to compare the following two numbers.

$$A = 6.212 \times 10^{8} \quad \text{and} \quad B = 4.73 \times 10^{9}$$

She says,

"6.212 is bigger than 4.73 so A is bigger than B."

(c) Is Asma correct?
You must give a reason for your answer.

.....

.....

.....

(1)

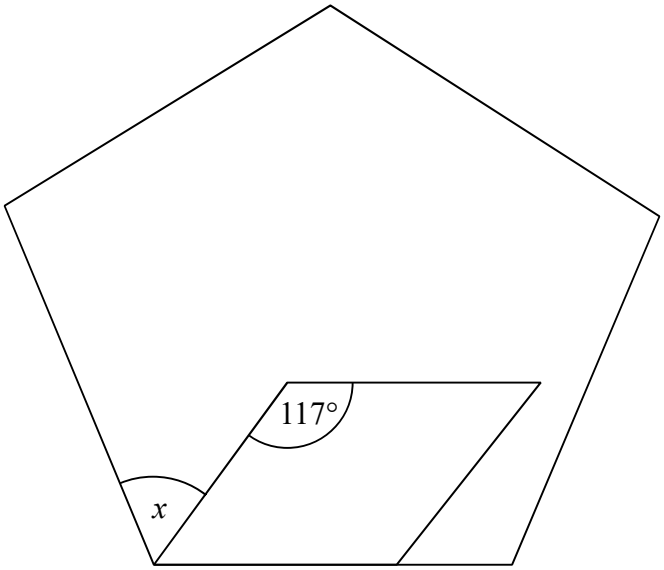
(Total for Question 3 is 3 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

4 The diagram shows a regular pentagon and a parallelogram.

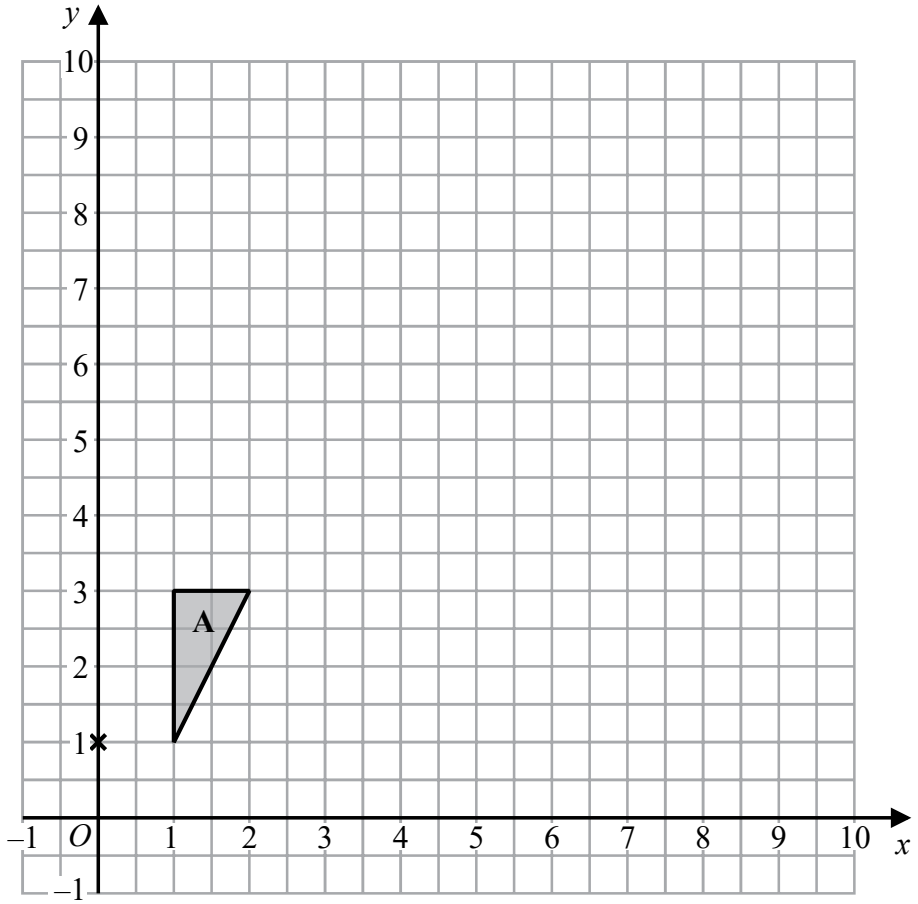


Work out the size of the angle marked x.
You must show all your working.

.....°

(Total for Question 4 is 4 marks)

5



Enlarge triangle **A** by scale factor 2.5 with centre (0, 1)

(Total for Question 5 is 2 marks)

6 At a depth of x metres, the temperature of the water in an ocean is T°C.
At depths below 900 metres, T is inversely proportional to x.

T is given by

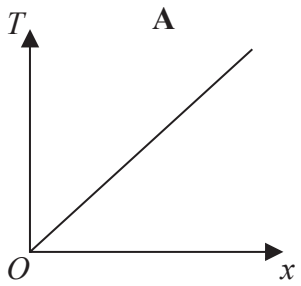
$$T = \frac{4500}{x}$$

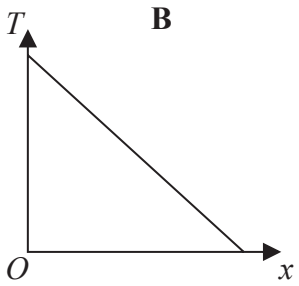
(a) Work out the difference in the temperature of the water at a depth of 1200 metres and the temperature of the water at a depth of 2500 metres.

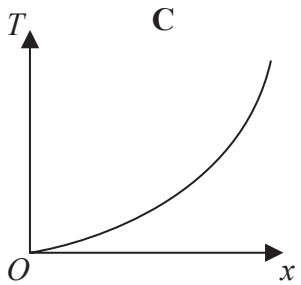
.....°C

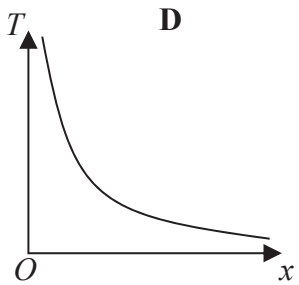
(3)

Here are four graphs.









One of the graphs could show that T is inversely proportional to x.

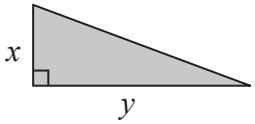
(b) Write down the letter of this graph.

.....

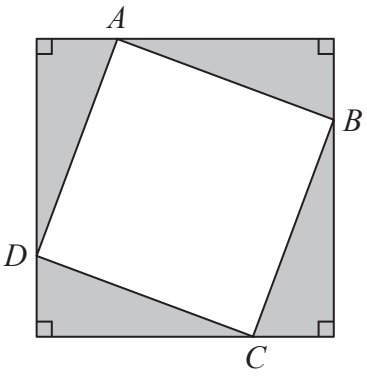
(1)

(Total for Question 6 is 4 marks)

7 Here is a right-angled triangle.



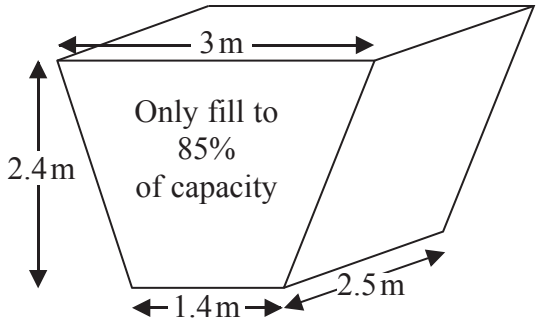
Four of these triangles are joined to enclose the square *ABCD* as shown below.



Show that the area of the square *ABCD* is $x^2 + y^2$

(Total for Question 7 is 3 marks)

8 The diagram shows an oil tank in the shape of a prism.
The cross section of the prism is a trapezium.



The tank is empty.

Oil flows into the tank.
After one minute there are 300 litres of oil in the tank.

Assume that oil continues to flow into the tank at this rate.

(a) Work out how many **more** minutes it takes for the tank to be 85% full of oil.
($1\,m^3 = 1000$ litres)

..... minutes
(5)

The assumption about the rate of flow of the oil could be wrong.

(b) Explain how this could affect your answer to part (a).

.....

.....

(1)

(Total for Question 8 is 6 marks)