Monster Questions – Set 3

Question 1

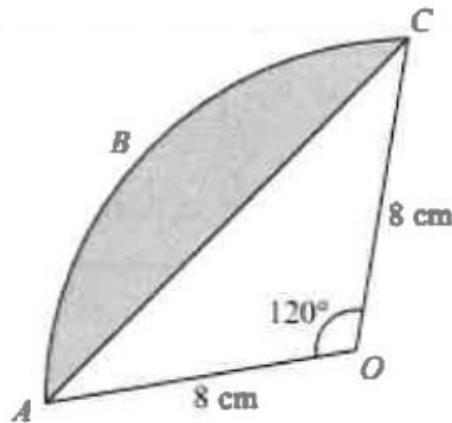

Diagram **NOT** accurately drawn

ABC is an arc of a circle with centre *O* and radius 8 cm.
AC is a chord of the circle.
Angle *AOC* = 120°

Calculate the perimeter of the shaded segment.
Give your answer correct to 3 significant figures.

Question 2

When a fair dice is thrown the probability of scoring 6 is $\frac{1}{6}$

Arun throws four fair dice.

Work out the probability that he scores 6 with at least one of the four dice.
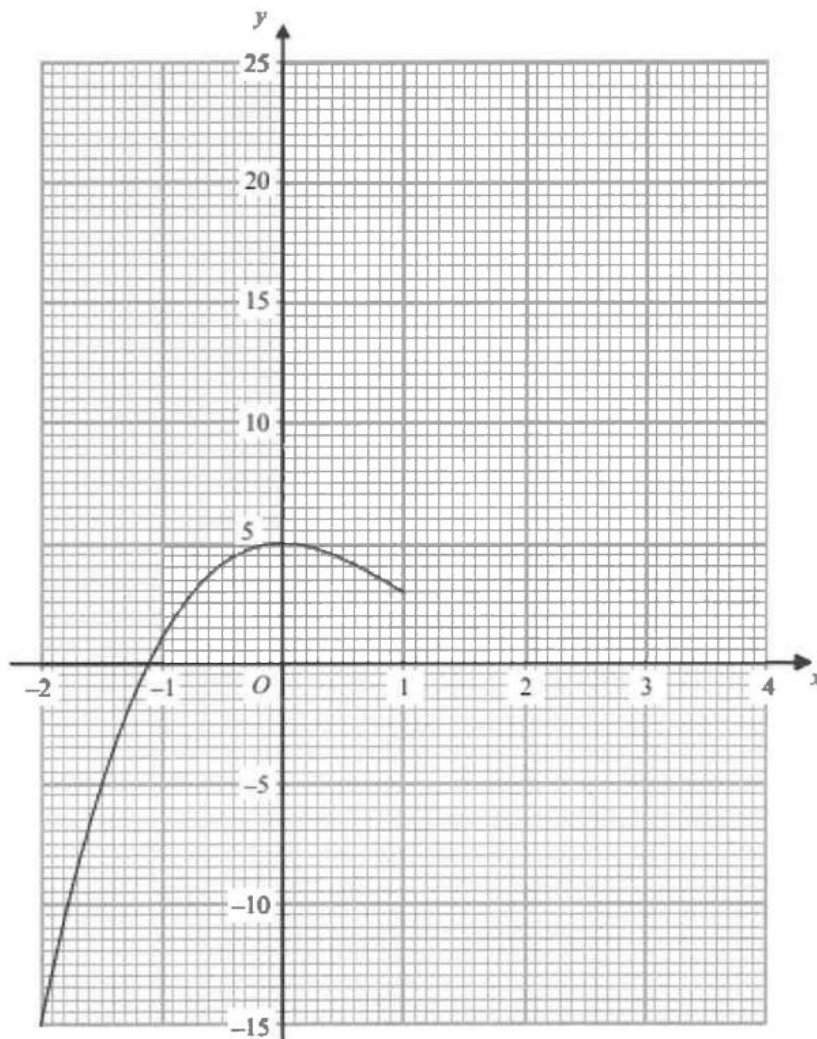
Question 3

(a) Complete the table of values for $y = x^3 - 3x^2 + 5$

x	-2	-1	0	1	2	3	4
y	-15	1	5	3			

(1)

(b) On the grid, complete the graph of $y = x^3 - 3x^2 + 5$ for $-2 \leqslant x \leqslant 4$

(c) Use the graph to find an estimate for the solution of the equation $x^3 - 3x^2 + 5 = 0$

$x =$ _____.

(1)

(d) By drawing a suitable straight line on the grid, find an estimate for the solution of the equation $x^3 - 3x^2 + 2x + 4 = 0$

Question 4

V is inversely proportional to the square of t

$V = 28$ when $t = 2.5$

(a) Express V in terms of t

(3)

(b) Work out the value of V when $t = 6.25$

$V = $ _____

(2)

Question 5

The diagram shows two points S and T.
The bearing of T from S is 043°

North

Diagram **NOT**
accurately drawn

43°

T

S

Work out the bearing of S from T.