

Gold Level

Question Paper 5

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Difficulty Level	Gold
Booklet	Question Paper 5

Time Allowed: 59 minutes

Score: /49

Percentage: /100

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	65%	55%	45%	35%	25%	15%	<15%

1

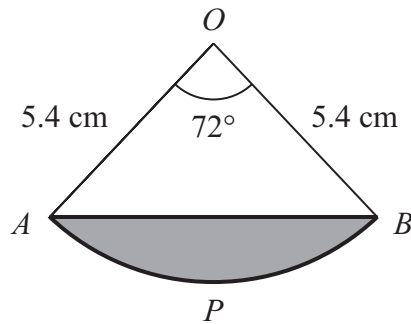


Diagram **NOT** accurately drawn

The diagram shows a sector $OAPB$ of a circle, centre O .
 AB is a chord of the circle.
 $OA = OB = 5.4\text{ cm}$.
Angle $AOB = 72^\circ$

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

..... cm^2

(Total for Question 1 is 5 marks)

2 Correct to 2 decimal places, the volume of a solid cube is 42.88 cm^3

Calculate the lower bound for the surface area of the cube.

..... cm^2

(Total for Question 2 is 4 marks)

3 Solve the simultaneous equations

$$y = 2x^2$$

$$y = 20 - 3x$$

Show clear algebraic working.

.....

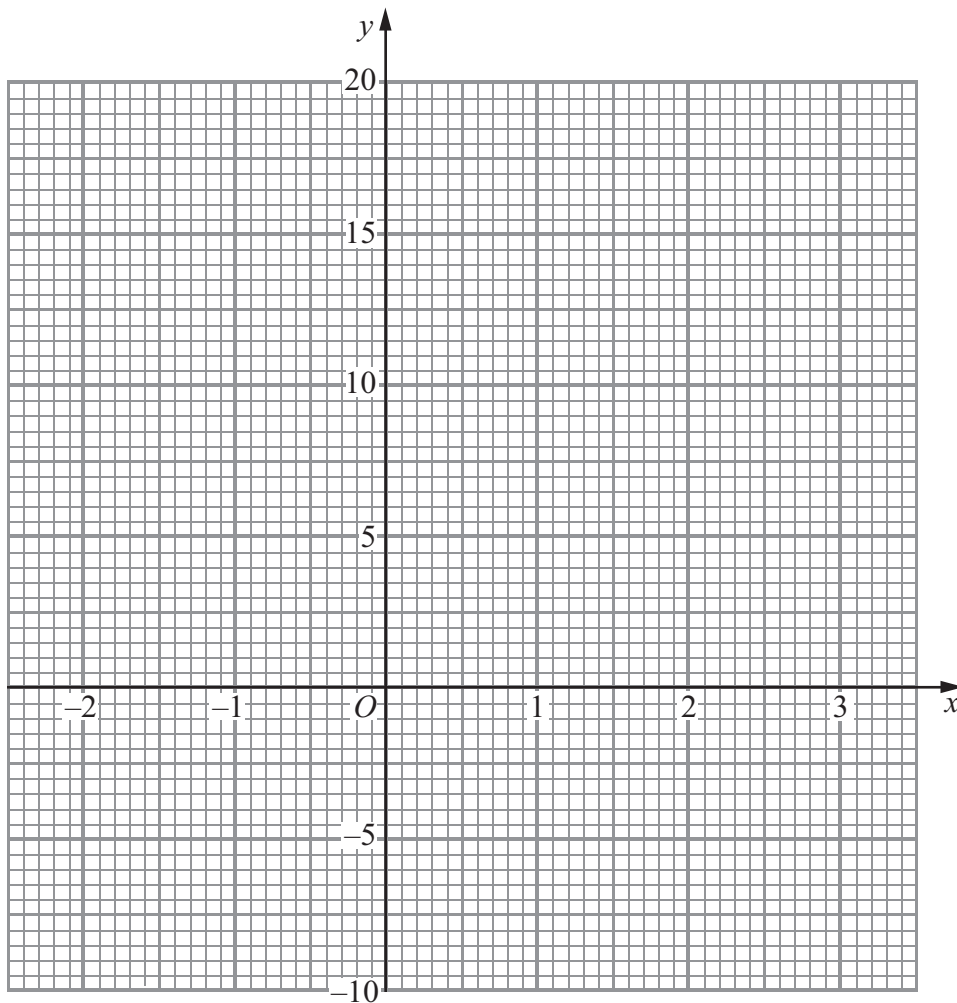
(Total for Question 3 is 5 marks)

4 (a) Complete the table of values for $y = x^3 - 3x - 1$

x	-2	-1	0	1	2	3
y		1				

(2)

(b) On the grid, draw the graph of $y = x^3 - 3x - 1$ for $-2 \leq x \leq 3$



(2)

(c) By drawing a suitable straight line on the grid, find an estimate for the solution of the equation $x^3 - 3x - 6 = 0$
Give your answer correct to 1 decimal place.

.....
(2)

(d) For the curve with equation $y = x^3 - 3x - 1$

(i) find $\frac{dy}{dx}$

.....

(ii) find the gradient of the curve at the point where $x = 4$

.....

(4)

(Total for Question 4 is 10 marks)

5

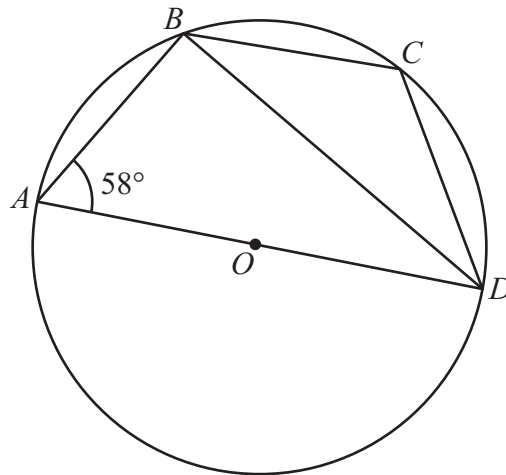


Diagram **NOT** accurately drawn

A , B , C and D are four points on a circle, centre O .
 AD is a diameter of the circle.
 Angle $BAD = 58^\circ$

(a) Calculate the size of angle ADB .

.....
 (2)

(b) (i) Calculate the size of angle BCD .

.....

(ii) Give a reason for your answer.

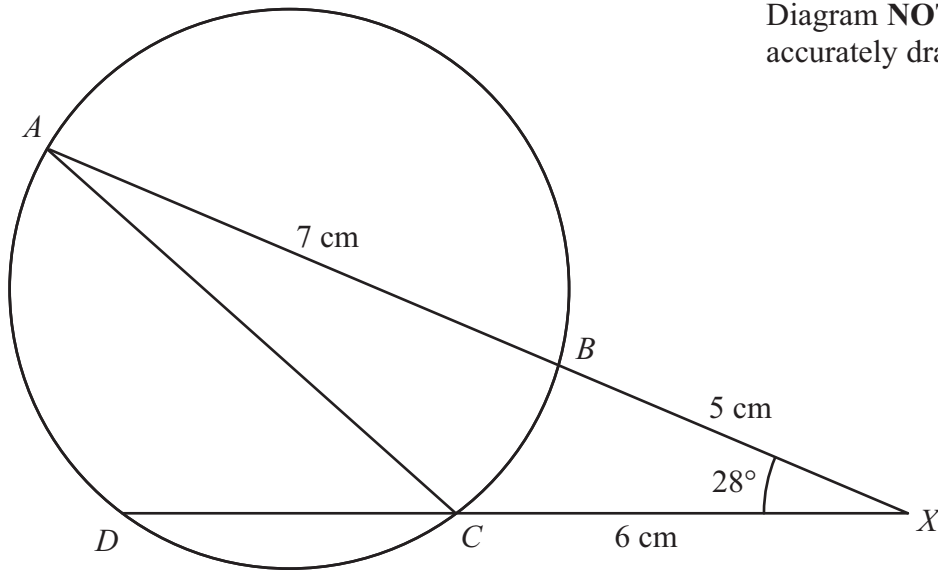
.....

 (2)

(Total for Question 5 is 4 marks)

6

Diagram **NOT**
accurately drawn



A, B, C and D are four points on a circle.
 ABX and DCX are straight lines.
 $AB = 7$ cm, $BX = 5$ cm and $CX = 6$ cm.
 Angle $BXC = 28^\circ$

- (a) Calculate the length of AC .
 Give your answer correct to 3 significant figures.

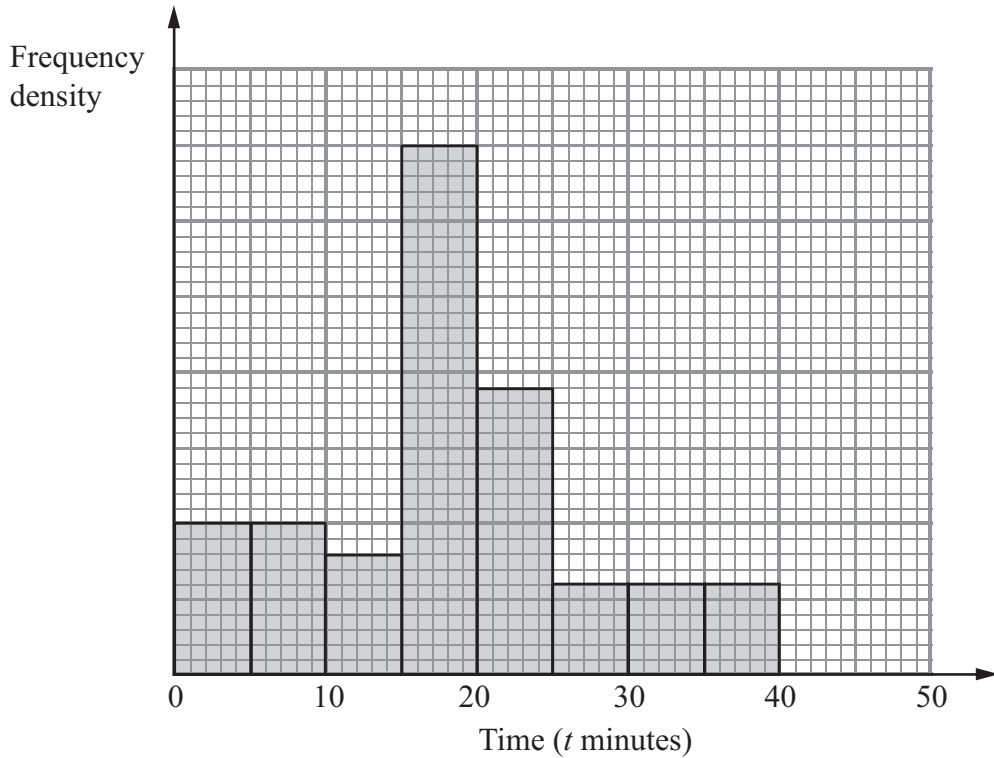
..... cm
 (3)

- (b) Calculate the length of DC .

..... cm
 (3)

(Total for Question 6 is 6 marks)

- 7 The histogram shows information about the times, t minutes, patients spent at a doctors' surgery on one day.
 No patient spent more than 40 minutes at the surgery.



- (a) Calculate the percentage of the patients who spent between 25 and 40 minutes at the surgery.

..... %
 (3)

- (b) 16 patients spent between 10 and 15 minutes at the surgery.

Calculate the total number of patients at the surgery that day.

.....
 (2)

(Total for Question 7 is 5 marks)

8 Bill and Jo play some games of table tennis.

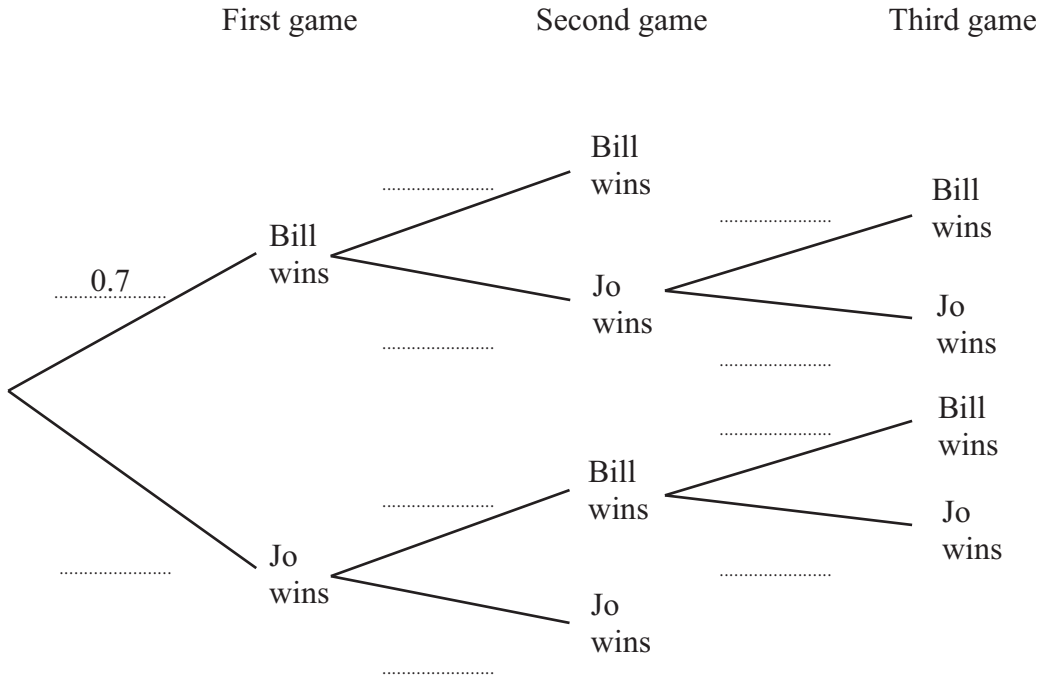
The probability that Bill wins the first game is 0.7

When Bill wins a game, the probability that he wins the next game is 0.8

When Jo wins a game, the probability that she wins the next game is 0.5

The first person to win two games wins the match.

(a) Complete the probability tree diagram.



(3)

(b) Calculate the probability that Bill wins the match.

(3)

9 $f(x) = 3x - 2$

$$g(x) = \frac{10}{x+2}$$

(a) Express the inverse function f^{-1} in the form $f^{-1}(x) = \dots$

$$f^{-1}(x) = \dots\dots\dots$$

(2)

(b) Find $gf(x)$
Simplify your answer.

$$gf(x) = \dots\dots\dots$$

(2)

(Total for Question 9 is 4 marks)
