

Gold Level

Question Paper 3

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Difficulty Level	Gold
Booklet	Question Paper 3

Time Allowed: 60 minutes

Score: /50

Percentage: /100

Grade Boundaries:

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

1

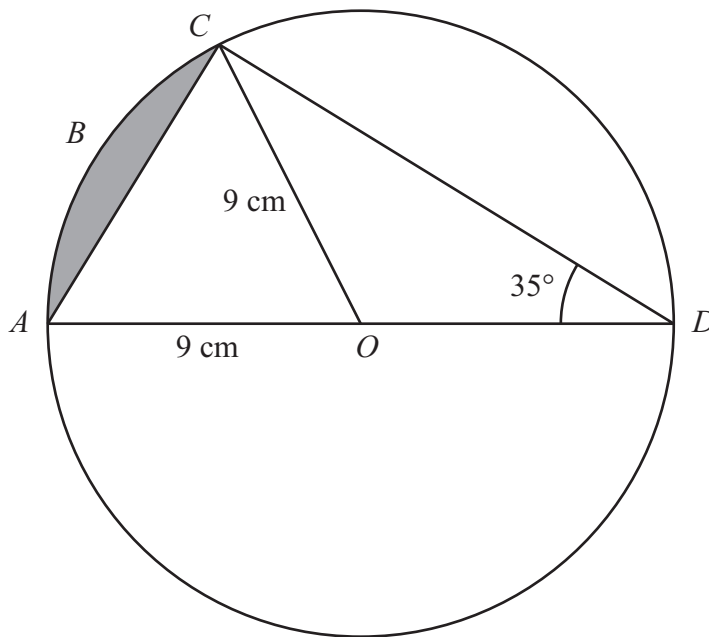


Diagram **NOT**
accurately drawn

AOD is a diameter of a circle, with centre O and radius 9 cm .
 ABC is an arc of the circle.
 AC is a chord.
 Angle $ADC = 35^\circ$

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

..... cm^2

(Total for Question is 6 marks)

- 2 Show that $\frac{\sqrt{3} + \sqrt{27}}{\sqrt{2}}$ can be expressed in the form \sqrt{k} where k is an integer.
State the value of k .

$k = \dots\dots\dots$

(Total for Question is 3 marks)

- 3 Simplify fully $\frac{4}{x} + \frac{3}{2-x}$

$\dots\dots\dots$

(Total for Question is 3 marks)

4

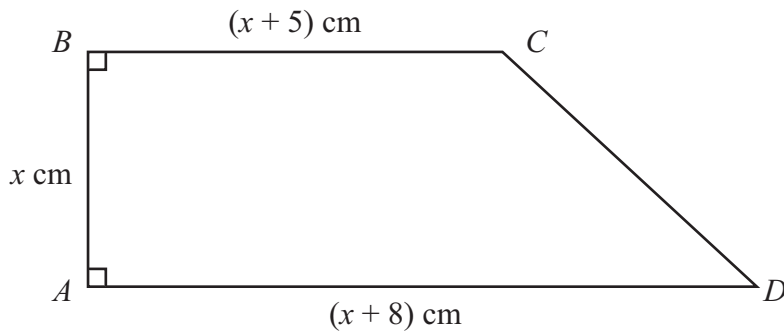


Diagram **NOT** accurately drawn

The diagram shows a trapezium $ABCD$ with AD parallel to BC .
 $AB = x$ cm, $BC = (x + 5)$ cm and $AD = (x + 8)$ cm.
 The area of the trapezium is 42 cm^2 .

(a) Show that $2x^2 + 13x - 84 = 0$

(2)

(b) Calculate the perimeter of the trapezium.

..... cm

(5)

(Total for Question is 7 marks)

5 The grouped frequency table gives information about the ages of 200 elephants.

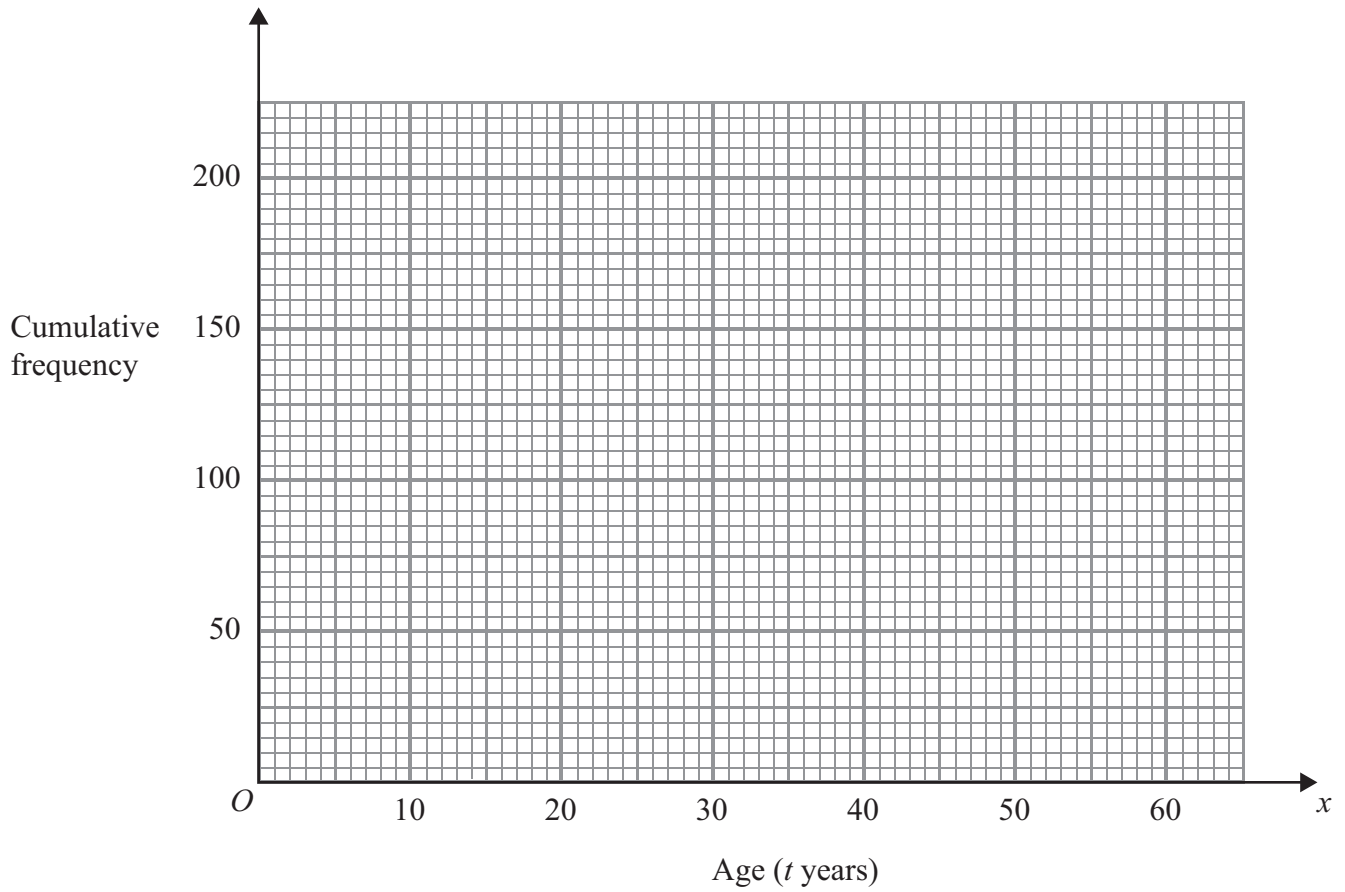
Age (t years)	Frequency
$0 < t \leq 10$	55
$10 < t \leq 20$	60
$20 < t \leq 30$	40
$30 < t \leq 40$	22
$40 < t \leq 50$	13
$50 < t \leq 60$	10

(a) Complete the cumulative frequency table.

Age (t years)	Cumulative frequency
$0 < t \leq 10$	
$0 < t \leq 20$	
$0 < t \leq 30$	
$0 < t \leq 40$	
$0 < t \leq 50$	
$0 < t \leq 60$	

(1)

(b) On the grid, draw a cumulative frequency graph for your table.



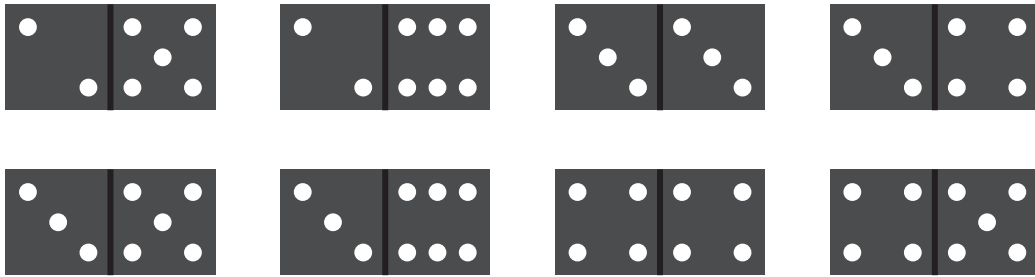
(2)

(c) Use the graph to find an estimate for the number of elephants with ages of more than 26 years.

.....
(2)

(Total for Question is 5 marks)

6 Here are 8 dominoes.



The 8 dominoes are put in a bag.

Riaz takes at random a domino from the bag.

(a) Find the probability that he takes a domino with a total of 8 spots or a domino with a total of 9 spots.

Helima takes at random 2 dominoes from the bag of 8 dominoes without replacement.

(b) Work out the probability that

(i) the total number of spots on the two dominoes is 18

.....
(ii) the total number of spots on the two dominoes is 17

.....
(5)

(Total for Question is 7 marks)

Do NOT write in this space.

7

$$f(x) = \sqrt{x-6}$$

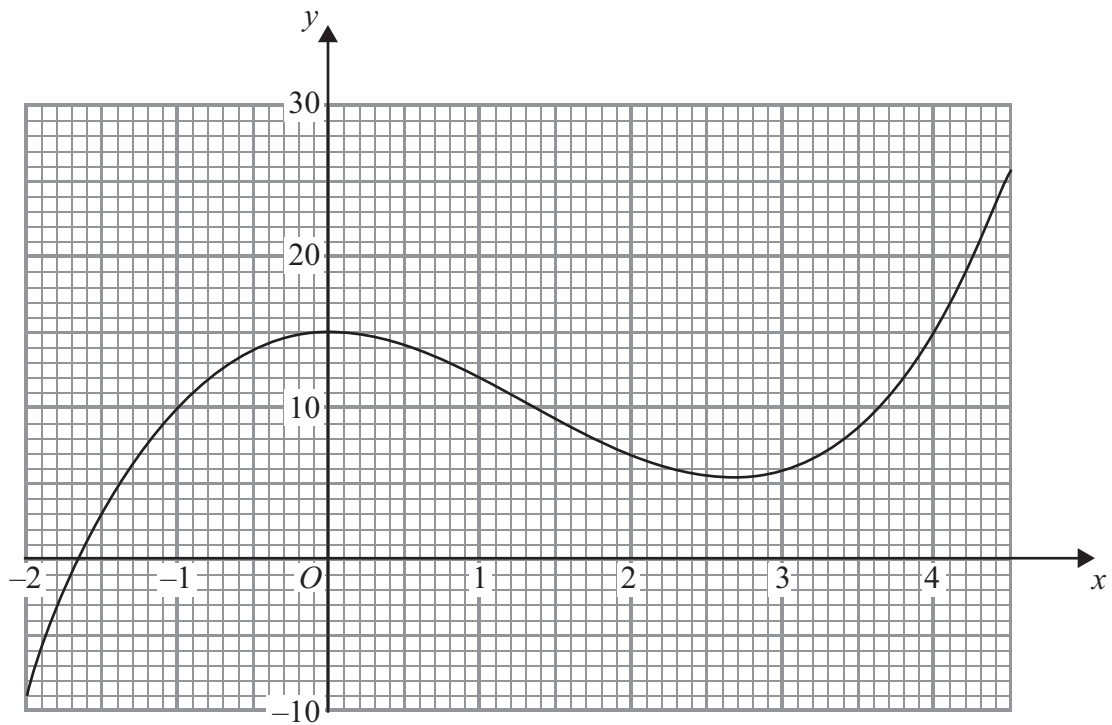
(a) Find $f(10)$

.....
(1)

(b) State which values of x must be excluded from a domain of f

.....
(2)

The diagram shows part of the graph of $y = g(x)$



(c) Find $g(2)$

.....
(1)

(d) Find $fg(0)$

.....
(2)

(e) One of the solutions of $g(x) = k$, where k is a number, is $x = 1$

Find the other solutions.

Give your answers correct to 1 decimal place.

.....
(3)

(f) Find an estimate for the gradient of the curve at the point where $x = 3.5$

Show your working clearly.

.....
(3)

(Total for Question is 12 marks)

8

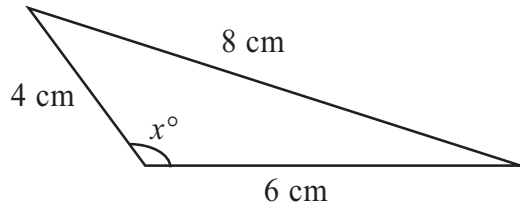


Diagram **NOT**
accurately drawn

Calculate the value of x .
Give your answer correct to 1 decimal place.

$x = \dots\dots\dots$

(Total for Question is 3 marks)

9 A and B are two sets.

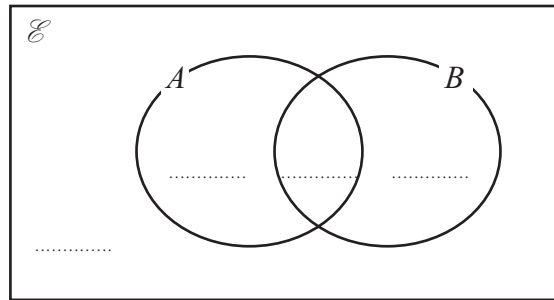
$$n(\mathcal{E}) = 37$$

$$n(A) = 22$$

$$n(A \cap B) = 12$$

$$n(A \cup B) = 30$$

(a) Complete the Venn Diagram to show the **numbers** of elements.



(2)

(b) Find (i) $n(A \cap B')$

.....

(ii) $n(A' \cup B')$

.....

(2)

(Total for Question is 4 marks)