Gold Level

Question Paper 23

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Difficulty Level	Gold
Booklet	Question Paper 23

Time Allowed: **56 minutes**

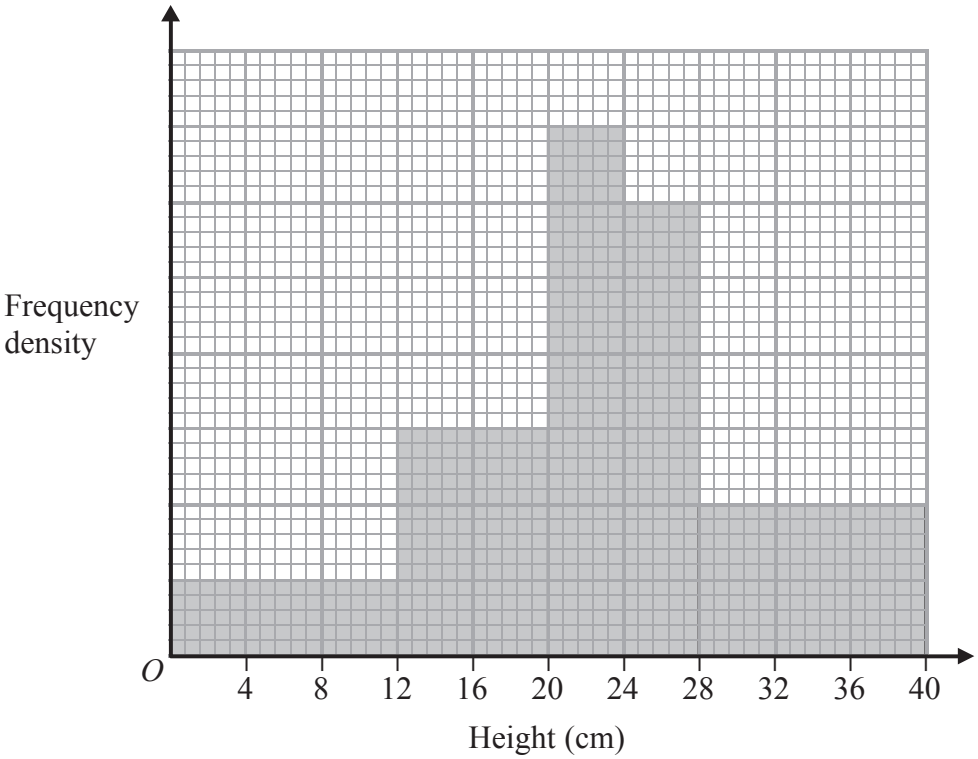
Score: **/46**

Percentage: **/100**

Grade Boundaries:

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

1



The histogram gives information about the heights of some plants.

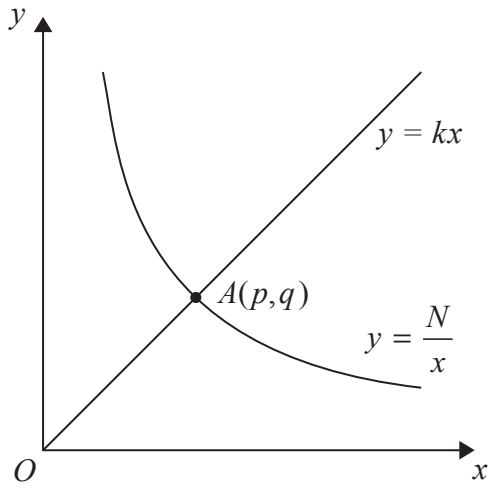
There are 360 plants with a height of 20 cm or less.

Work out the number of plants with a height of more than 20 cm.

.....

(Total for Question 1 is 3 marks)

2



The diagram shows the straight line with equation $y = kx$ intersecting the curve with equation $y = \frac{N}{x}$ at the point $A(p, q)$.

(a) Find p and find q.

Give each answer in its simplest form, in terms of k and N.

$p =$ .....

$q =$ .....

(3)

Given that $p = 2q$

(b) find the value of k.

$k =$ .....

(2)

(Total for Question 2 is 5 marks)

3 (a) Factorise $4x^2 - 1$

.....

(2)

(b) Solve $\dfrac{4}{2x+1} + \dfrac{1}{4x^2-1} = 3$

Show clear algebraic working.

.....

(4)

(Total for Question 3 is 6 marks)

4 (a) Factorise $a^2 - b^2$

.....

(1)

$N = 2^{22} - 1$

(b) Write N as the product of two integers, both of which are greater than 1000

..... × .....

(2)

(Total for Question 4 is 3 marks)

5 $f(x) = \dfrac{3}{x+1} + \dfrac{1}{x-2}$

(a) State one value of x which cannot be included in any domain of f.

.....

(1)

(b) Find the value of f(0)

.....

(1)

(c) Find the value of x for which $f(x) = 0$
Show clear algebraic working.

$x =$ .....

(3)

(Total for Question 5 is 5 marks)

6. $y = \dfrac{2a}{b - c}$

a = 42 correct to 2 significant figures.
b = 24 correct to 2 significant figures.
c = 14 correct to 2 significant figures.

Work out the lower bound for the value of y.
Give your answer correct to 2 significant figures.
Show your working clearly.

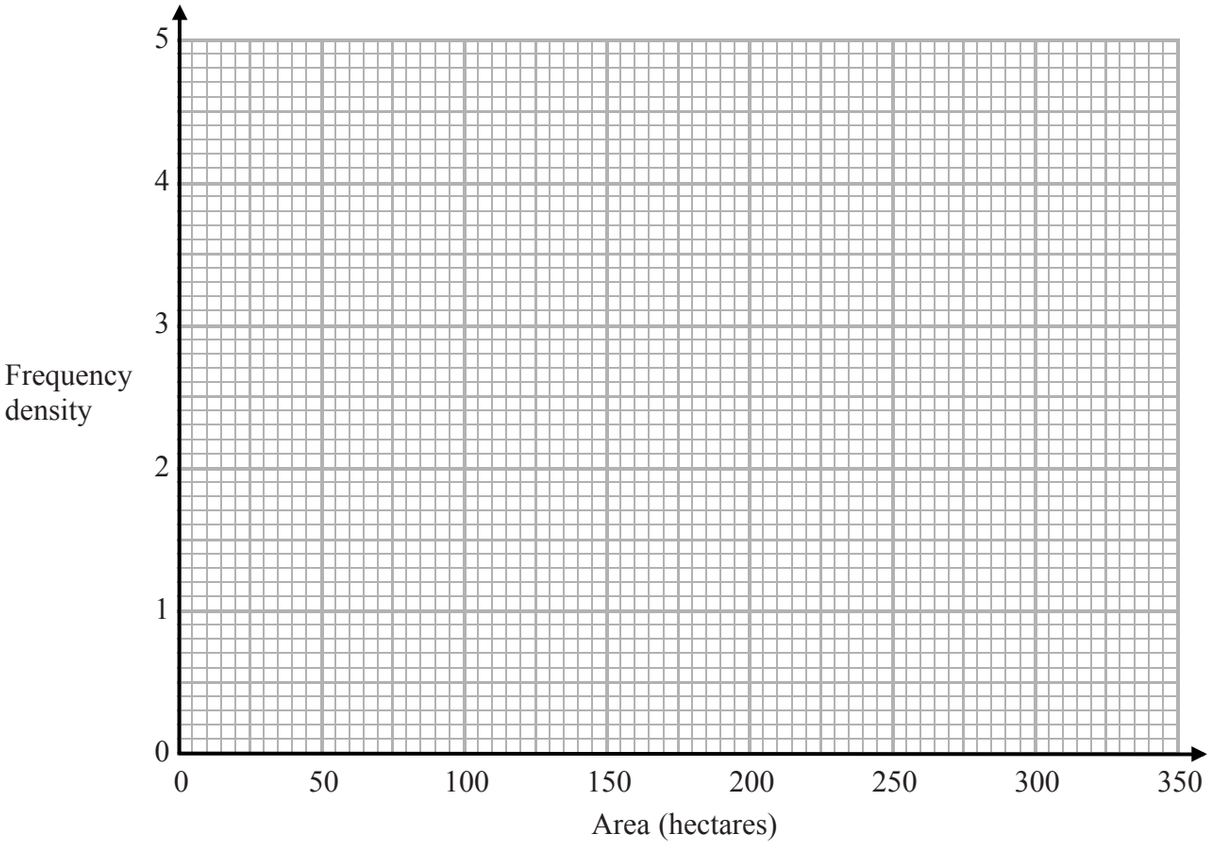
.....

(Total for Question 6 is 3 marks)

7 The table gives information about the areas of some farms in France.

Area (A hectares)	Frequency
$0 < A \leqslant 20$	50
$20 < A \leqslant 50$	90
$50 < A \leqslant 100$	120
$100 < A \leqslant 300$	160

On the grid, draw a histogram to show this information.



(Total for Question 7 is 3 marks)

8

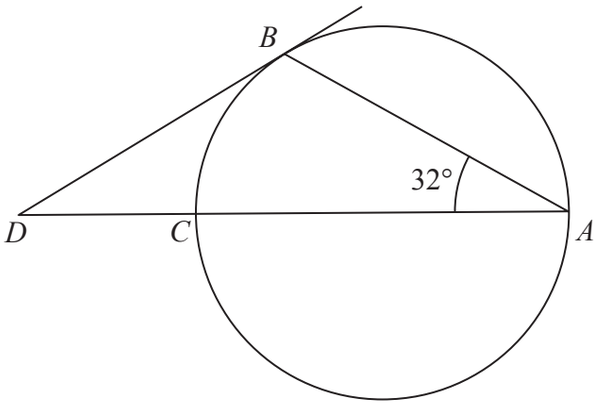


Diagram **NOT** accurately drawn

A, *B* and *C* are three points on a circle.

DCA is a straight line.
CA is a diameter of the circle.
DB is a tangent to the circle.

Calculate the size of angle *CDB*.

.....°

(Total for Question 8 is 3 marks)

9 A, r and T are three variables.

A is proportional to T^2
A is also proportional to r^3

$T = 47$ when $r = 0.25$

Find r when $T = 365$
Give your answer correct to 3 significant figures.

.....

(Total for Question 9 is 4 marks)

10

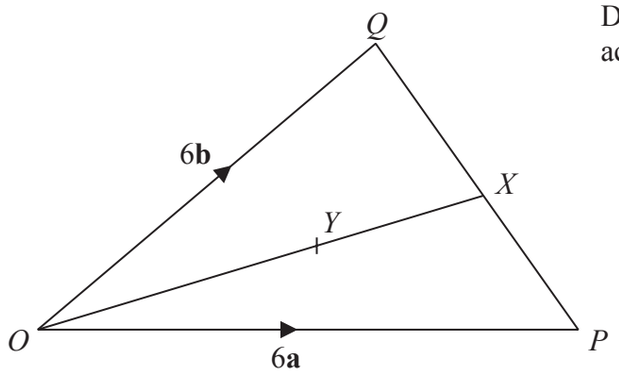


Diagram **NOT** accurately drawn

In triangle OPQ, $\overrightarrow{OP} = 6\mathbf{a}$ and $\overrightarrow{OQ} = 6\mathbf{b}$

X is the midpoint of PQ.

(a) Find, in terms of **a** and **b**, the vector $\overrightarrow{OX}$
Give your answer in its simplest form.

.....

(2)

Y is the point on OX such that $OY : YX = 2 : 1$

(b) Find, in terms of **a** and **b**, the vector $\overrightarrow{QY}$
Give your answer in its simplest form.

.....

(2)

(Total for Question 10 is 4 marks)

11 The diagram shows a right-angled triangle and a rectangle.

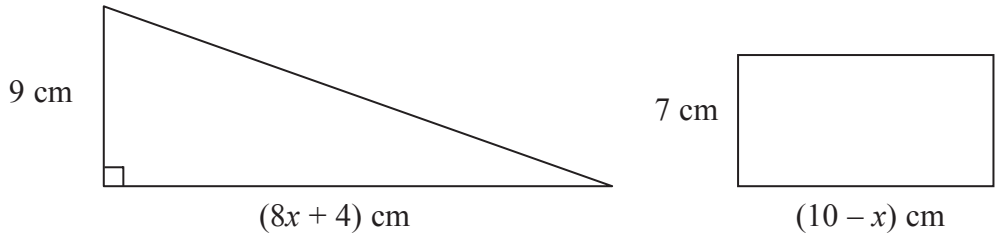


Diagram **NOT** accurately drawn

The area of the triangle is twice the area of the rectangle.

(i) Write down an equation for x.

.....

(ii) Find the area of the rectangle.
Show clear algebraic working.

..... cm^2

(Total for Question 11 is 7 marks)