Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

EDEXCEL Mock Test Papers

paper2 -Test2

Mathematics
PAPER 2 (Calculator)
Higher Tier

2H

Morning (Time: 1 hour 30 minutes)

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator, Formulae Sheet (enclosed). Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – there may be more space than you need.
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets
  – use this as a guide as to how much time to spend on each question.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

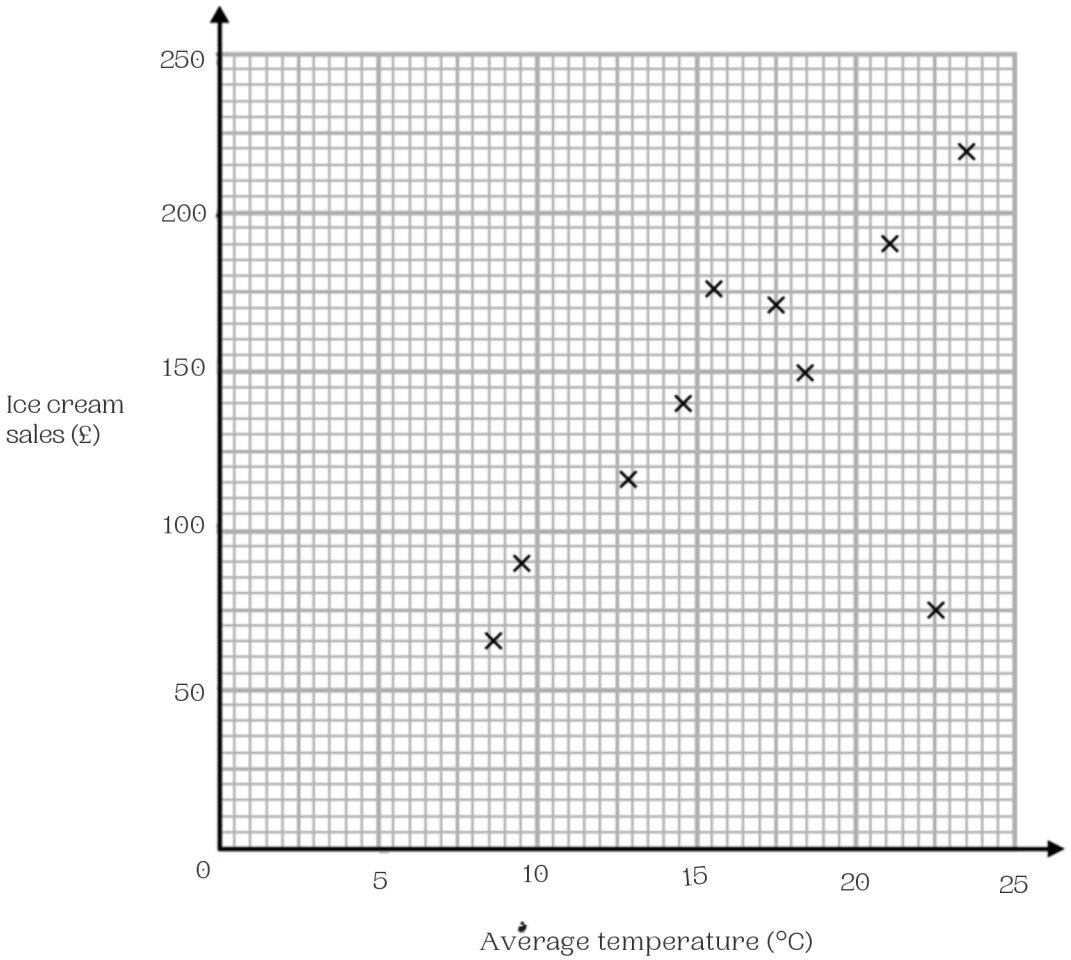
Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 The average daytime temperature for 10 days is recorded.
A shop also records its ice cream sales for each of the 10 days.

The scatter graph shows this information.



(a) What type of correlation does the scatter graph show?

.....

(1)

(b) One of the points is an outlier. Write down the coordinates for this point.

(.....) , (.....)

(1)

(c) On another day the temperature was 12°.
Estimate the ice cream sales on this day.

£ .....

(2)

(Total for Question 1 is 4 marks)

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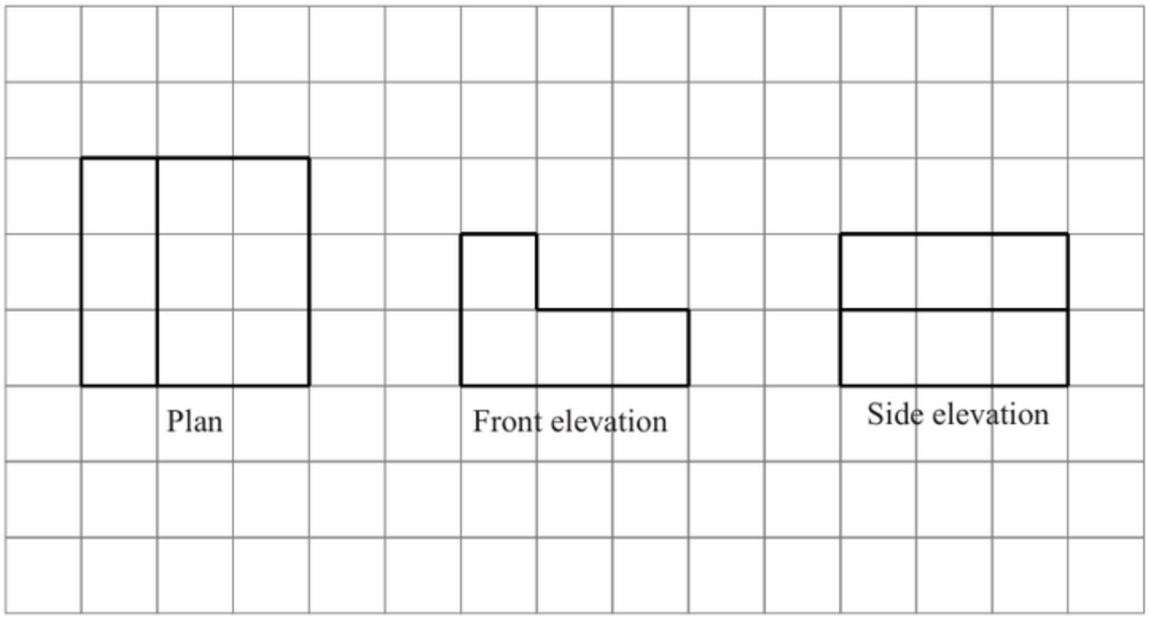
2 The diagram shows the plan, front elevation and side elevation of a solid shape, drawn on a centimetre grid.



In the space below, draw a sketch of the solid shape.
Give the dimensions of the solid on your sketch.

(Total for Question 2 is 2 marks)

3 Here are the first 5 terms of an arithmetic sequence.

-3 1 5 9 13

(a) Find an expression, in terms of n, for the nth term of this sequence.

.....

(2)

The nth term of a different arithmetic sequence is 2n – 3

(b) Is 101 a term in this sequence?
Show how you get your answer.

.....

(2)

(Total for Question 3 is 4 marks)

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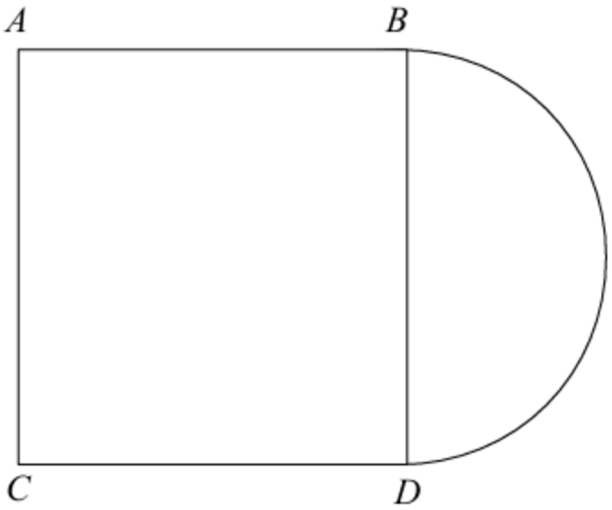


An area is formed by a square, ABCD, and a semi circle.
BD is the diameter of the semi circle.

The radius of the semi circle is 4m.

The area is going to be covered completely with lawn seed.

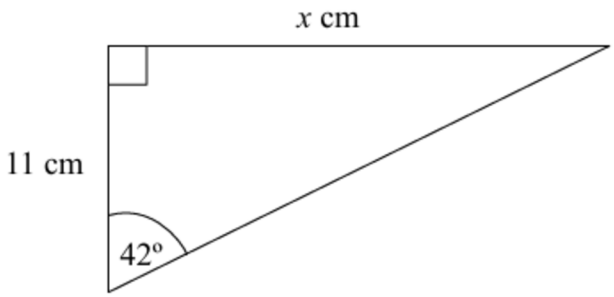
A box of lawn seed covers 25 m^2.

How many boxes of lawn seed will be needed?
You must show your working.

.....

(Total for Question 4 is 5 marks)

5



Work out the value of x.

x = ...

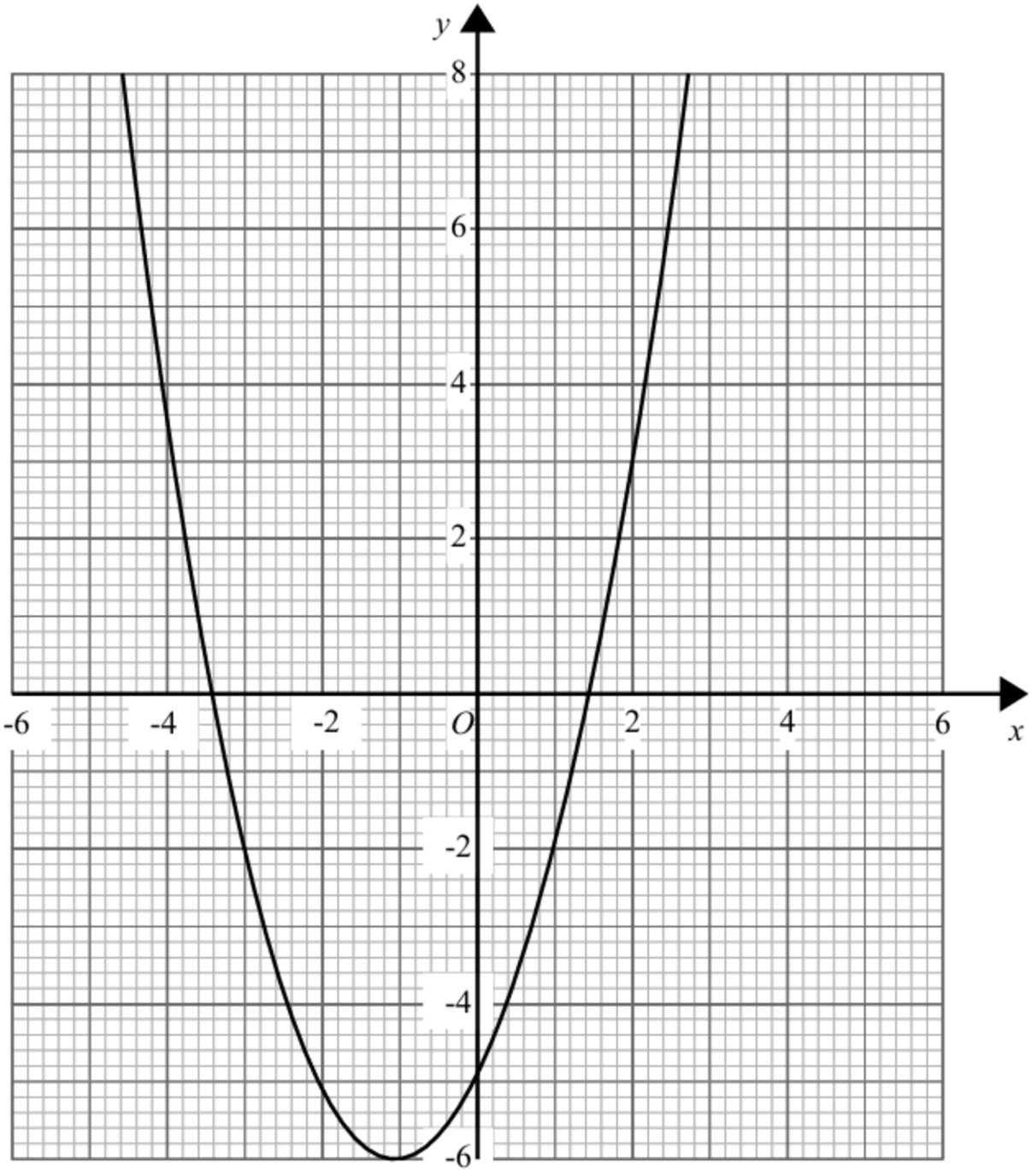
(Total for Question 5 is 2 marks)

6 James bought a house for £350 000.
In the first year the house price increased by 3%
In the second year the house price increased by 2%
In the third year the house price depreciated by 5%
Work out the value of the house at the end of 3 years.

£.....

(Total for Question 6 is 3 marks)

7 Here is the graph of $y = x^2 + 2x - 5$



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(a) Write down the turning point of the graph $y = x^2 + 2x - 5$

(..... , ...)

(1)

(b) Use the graph to find the roots of the equation $x^2 + 2x - 5 = 2$

.....

(2)

(Total for Question 7 is 3 marks)

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8 Eeshu buys a house for £203 500
She sells the house for £213 590

Work out her percentage profit.

..... %

(Total for Question 8 is 3 marks)

9 Line A passes through the points (-2, 1) and (5, 8)

Find the equation of the line parallel to A that passes through (3,10)

.....

.....

.....

(Total for Question 9 is 3 marks)

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10 Amelia bought a new car for £20 000.
In the first year the value of the car depreciates by 30%.
In the second year and the third year the car depreciates by 15%
Work out the value of the car after three years.

£.....

(Total for Question 10 is 3 marks)

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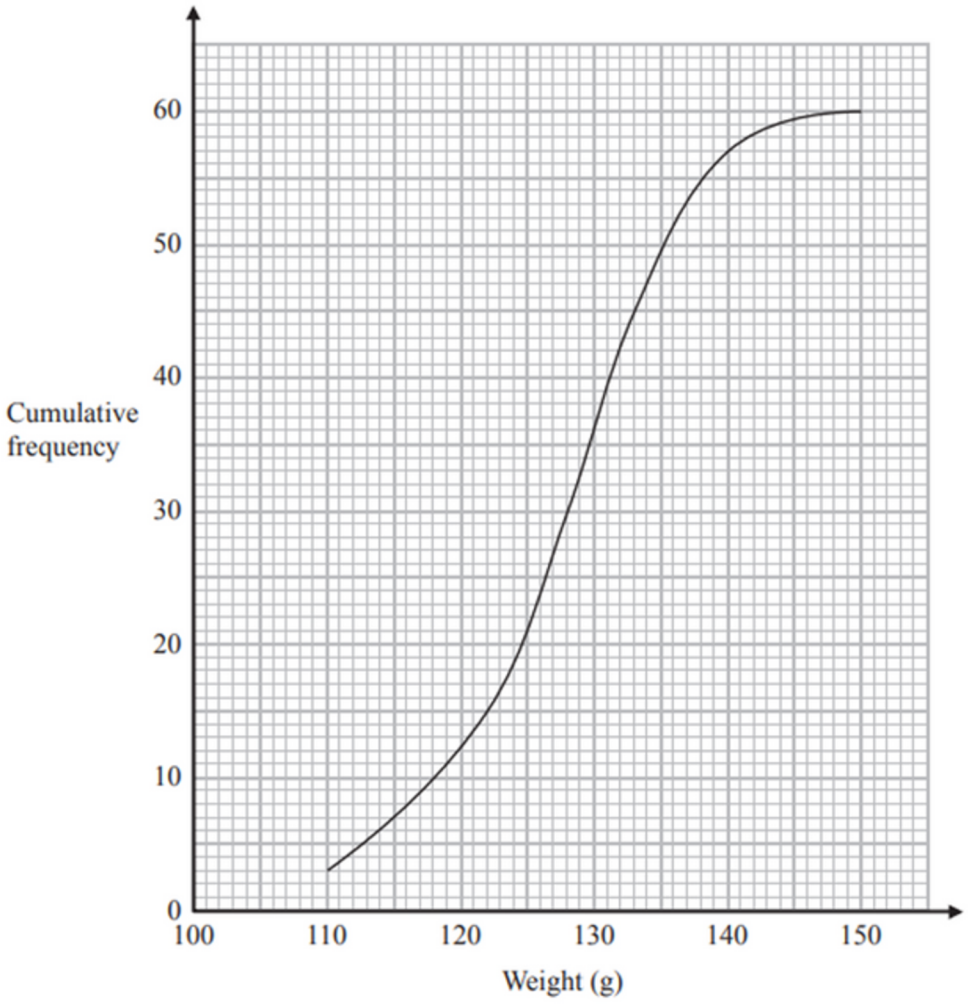
11 The cumulative frequency graph gives some information about the weights of some objects.



(a) Find the median weight.

.....g
(1)

(b) Find the inter quartile range

.....g
(2)

(Total for Question 11 is 3 marks)

12 Here are the first 5 terms of a quadratic sequence.

-8 2 16 34 56

(a) Show that the nth term is $2n^2 + 4n - 14$

.....

.....

.....

(4)

(Total for Question 12 is 4 marks)

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13 A and B are points on a centimetre grid.
A is the point with coordinates (2, -3)
B is the point with coordinates (-4, 5)

Work out the length of AB.

Give your answer correct to 1 decimal place.

..... cm

(Total for Question 13 is 2 marks)

14 Simplify fully $\frac{3x+6}{x-4} \div \frac{2x^2+9x+10}{x^2-4x}$

(Total for Question 14 is 3 marks)

15 A circle has a radius of 12 metres.

(a) Work out an estimate for the area of the circle.

..... m^2

(3)

(b) Is your answer to part (a) an underestimate or an overestimate?

Give a reason for your answer.

.....

.....

.....

(1)

(Total for Question 15 is 4 marks)

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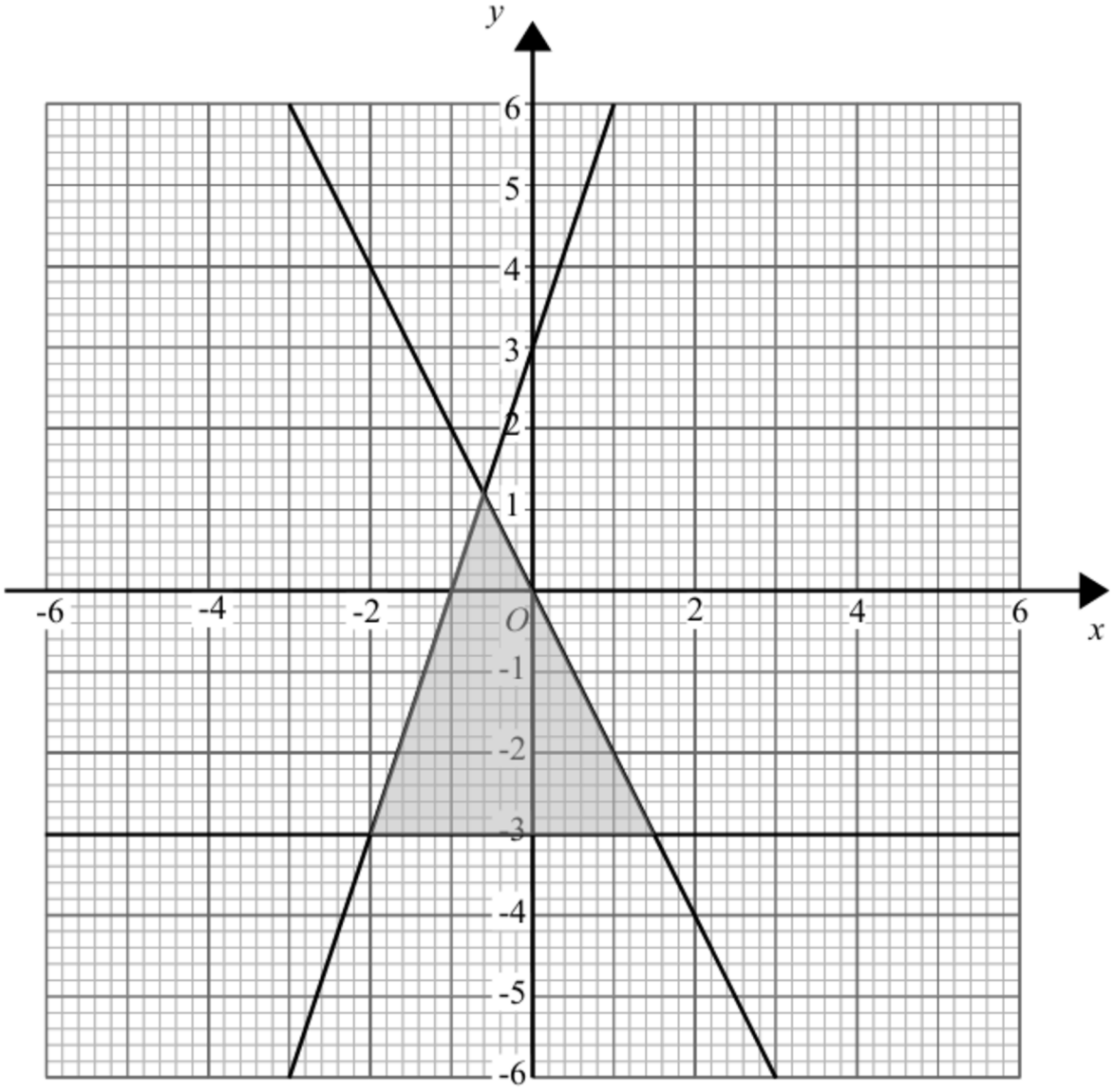
16



Write down the three inequalities that define the shaded region

.....

.....

.....

(Total for Question 16 is 4 marks)

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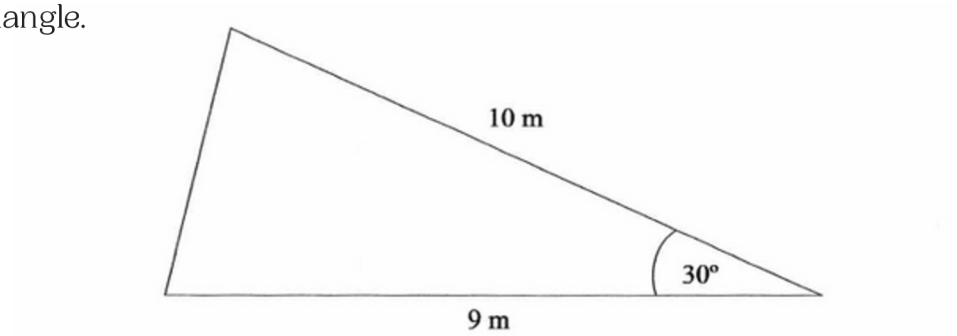
17 Apples cost 25p each.
Oranges cost 25p each.
The total cost of a apples and o oranges is C.
Write a formula for the total cost of a apples and o oranges.

C = ...

(Total for Question 17 is 2 marks)

18 Here is a triangle.



Work out the area of the triangle.

..... m2

(Total for Question 18 is 2 marks)

19 Solve $3x^2 - 4x - 7 = 0$

.....

(Total for Question 19 is 3 marks)

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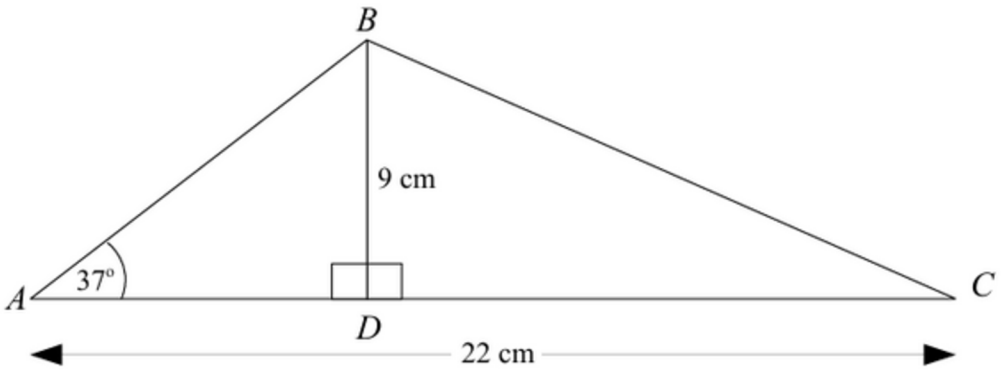


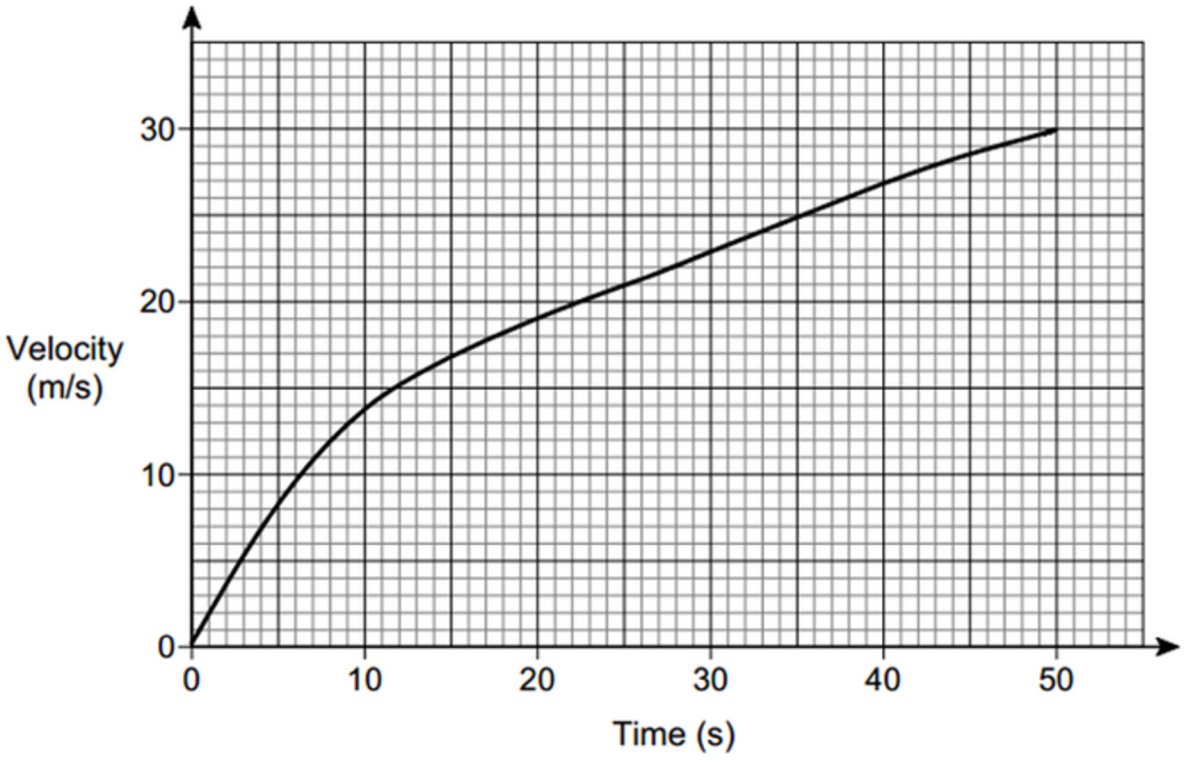
Work out the size of angle BCD.
Give your answer to 1 decimal place.

0

.....

(Total for Question 20 is 4 marks)

21 Here is the velocity-time graph of a car for 50 seconds



(a) Work out the average acceleration during the 50 seconds.
Give the units of your answer

.....

(2)

(b) Estimate the time during the 50 seconds when the instantaneous acceleration = the average acceleration.
You must show your working on the graph.

.....

(2)

(Total for Question 21 is 4 marks)

22 Given that $f(x) = x2 - 17$ and $g(x) = x + 3$

Solve $f^{-1}(x) = g^{-1}(x)$

(Total for Question 22 is 4 marks)

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23 A swimming race is measured to have a distance of 2.4 km, correct to the nearest 0.1 km.
Anna swims the race in a time of 52 minutes 30 seconds, correct to the nearest second.

Anna's average speed in this race is V km/hour.

By considering bounds, calculate the value of V to a suitable degree of accuracy.
You must show all your working and give a reason for your answer.

(Total for Question 23 is 5 marks)

24 A circle has the equation $x^2 + y^2 = 5$

P is the point (1,2) on the circle $x^2 + y^2 = 5$

Work out the equation of the tangent to the circle at P.

.....

(Total for Question 24 is 4 marks)

TOTAL FOR PAPER IS 80 MARKS