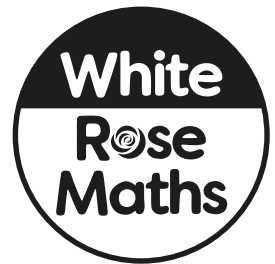


For: Pearson Edexcel GCSE (9–1)

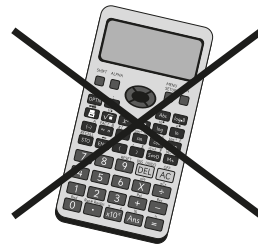


GCSE

Practice Paper 1MA1

Mathematics

Paper 1H (Non-Calculator) Higher Tier



Surname

Other names

You should have:

- A pen, pencil, ruler and an eraser.
- Tracing paper may be used.
- A formula sheet.

Information

- The total mark for this paper is 80
- The marks for each question are shown in brackets.
- Answer all 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 not be used.
- Check your answers if you have time at the end.

1 a) Simplify $6a - 3a - 2a$.

_____ (1 mark)

b) Simplify $5 \times a \times b \times 7$

_____ (1 mark)

2 Work out the difference between 30% of 80 and $\frac{4}{7}$ of 35

_____ (3 marks)

3 Solve $7n > 3n + 10$

(2 marks)

4 Write 240 as a product of its prime factors.

(2 marks)

5 a) Write 4.31×10^4 as an ordinary number.

(1 mark)

b) Write 0.00652 in standard form.

(1 mark)

c) Calculate $(9.6 \times 10^4) \div (3 \times 10^{-2})$.
Give your answer in standard form.

(2 marks)

- 6** The volume of a cube is 64 cm^3
How long are the edges of the cube?

_____ cm
(1 mark)

- 7 a)** Work out $\frac{5}{8} - \frac{3}{10}$

(2 marks)

- b)** Work out $2\frac{1}{5} \times \frac{5}{9}$

Give your answer as a mixed number in its simplest form.

(2 marks)

- 8** A piece of metal has a mass of 780 g and a volume of 60 cm³
Work out the density of the metal.

_____ g/cm³
(2 marks)

- 9** A spinner can land on red, green, blue, yellow or purple.
The probabilities of the spinner landing on red and purple are shown in the table.

Colour	red	green	blue	yellow	purple
Probability	0.24				0.25

The probabilities of the spinner landing on green, blue or yellow are equal.
Complete the table.

(2 marks)

10 Scott has half as much money as Tom.

Dora has three times as much money as Tom.

a) Write the ratio of Scott's money : Tom's money : Dora's money in its simplest form.

(2 marks)

Altogether Scott, Tom and Dora have £450

b) How much money does Tom have?

(2 marks)

11 The probability that a biased dice lands on 6 is 0.4

The dice is rolled twice.

Work out the probability that the dice lands on 6 both times.

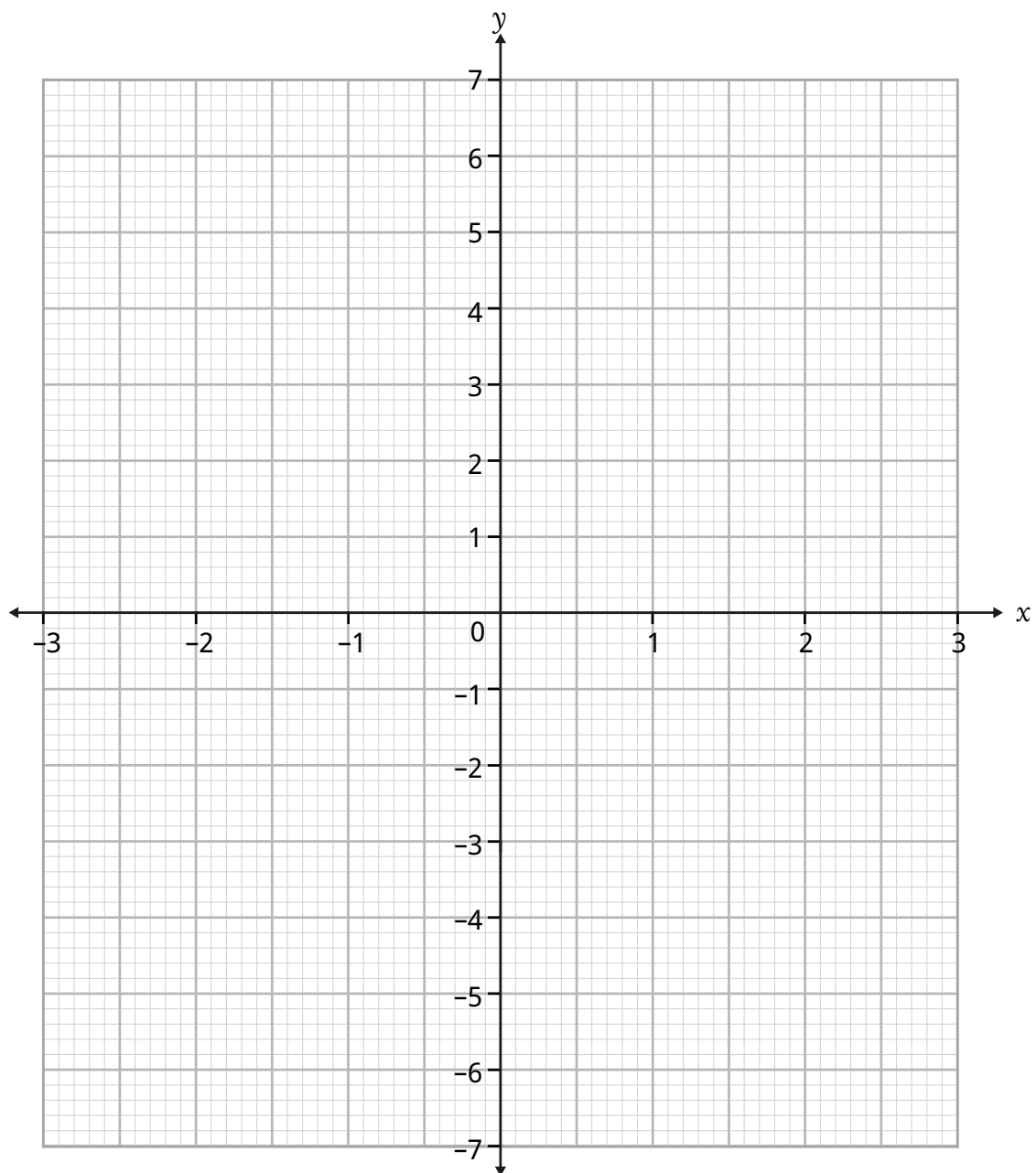
(2 marks)

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

x	-3	-2	-1	0	1	2	3
y				-5			7

(2 marks)

b) On the grid, draw the graph of $y = x^2 + x - 5$ for values of x from -3 to 3



(2 marks)

13 Three of the interior angles of a pentagon are 115° , 120° and 125° .

The other two angles are equal.

Find the size of the other two angles.

_____ °

(3 marks)

14 Solve $x^2 + x - 12 = 0$

(2 marks)

15 Three quarters of the people in a theme park are children.

The children are all either boys or girls.

The ratio of boys to girls is 4 : 5

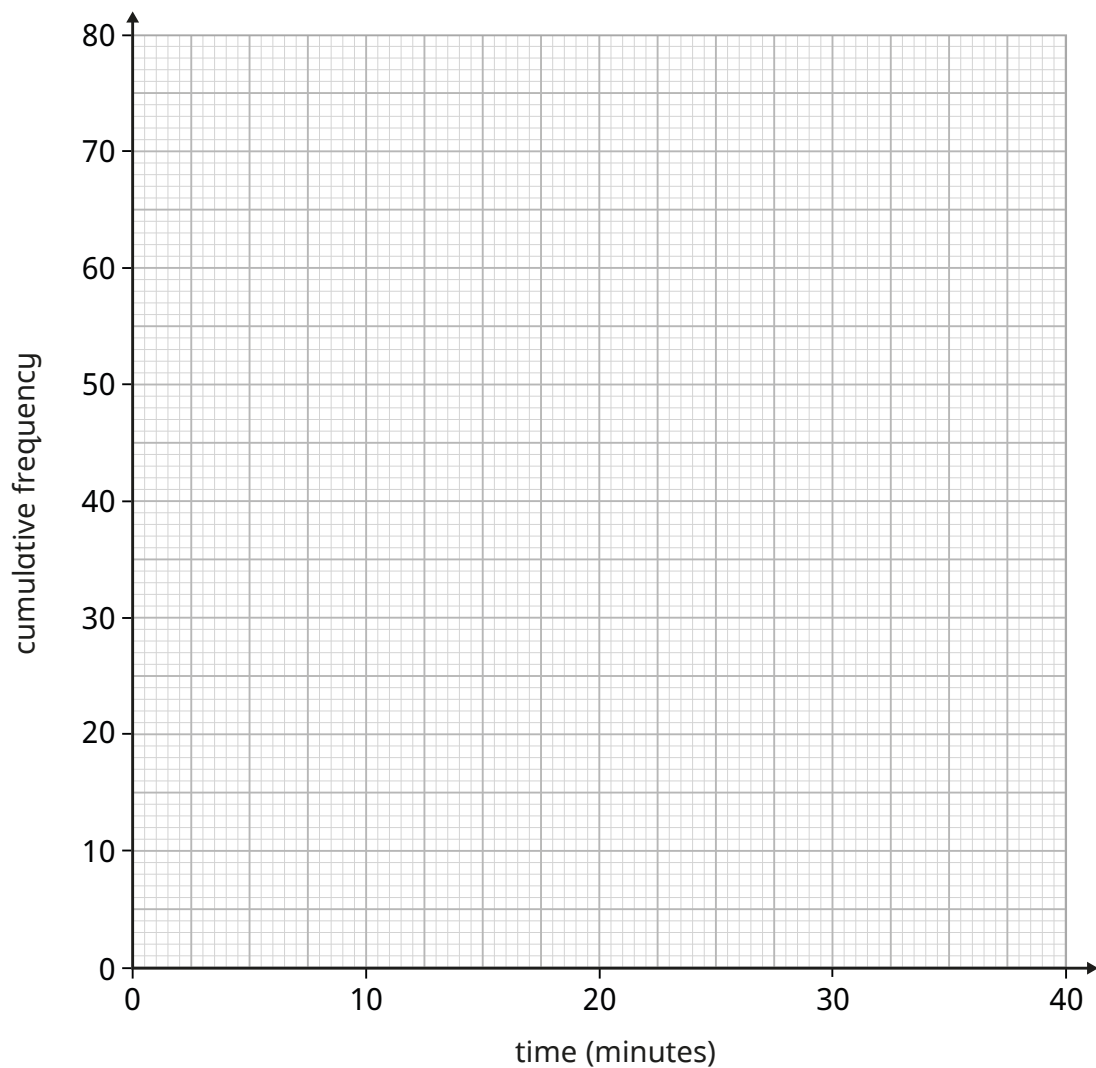
What fraction of all the people in the theme park are girls?

(2 marks)

16 The table shows the times waited by 80 people to be served at a restaurant.

Time waited, x minutes	Frequency
$0 < x \leq 10$	7
$10 < x \leq 20$	18
$20 < x \leq 25$	23
$25 < x \leq 30$	26
$30 < x \leq 40$	6

a) Draw a cumulative frequency graph to represent this information.

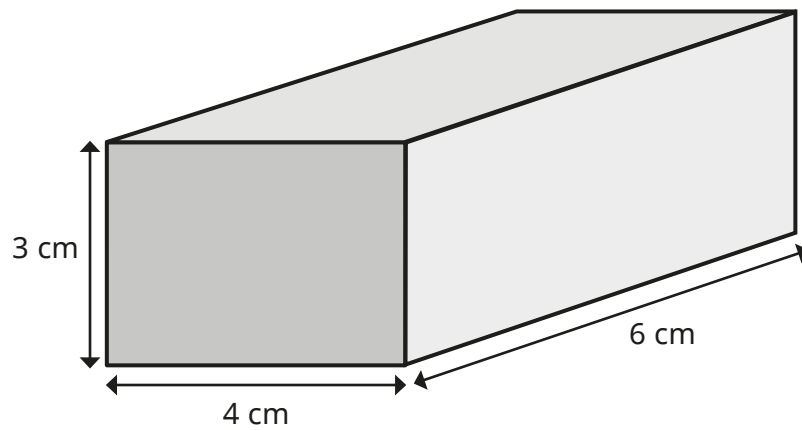


(2 marks)

b) Use your cumulative frequency graph to estimate the interquartile range of the times waited by the people in the restaurant.

_____ (2 marks)

17 Here is a cuboid.



a) Work out the surface area of the cuboid.

_____ cm²
(2 marks)

b) Show that the longest diagonal of the cuboid is $\sqrt{61}$ cm.

(2 marks)

18 The mean mass of 12 people is 80 kg.
Two of the people have a mass of 75 kg.
Find the mean mass of the remaining 10 people.

_____ kg

(2 marks)

19 Expand and simplify $(x + 4)(x + 3)(x - 2)$.

(3 marks)

20 a) Write down the value of 5^{-2}

(1 mark)

b) Work out $8^{\frac{2}{3}}$

(2 marks)

c) Write $0.4\dot{7}$ as a fraction in its simplest form.

(2 marks)

d) Show that $(\sqrt{50} + \sqrt{2})^2$ is an integer.

(2 marks)

21 y is inversely proportional to the square root of x .

When $x = 4$, $y = 8$

a) Find an equation for y in terms of x .

_____ (2 marks)

b) Find the value of x when $y = 2$

_____ (2 marks)

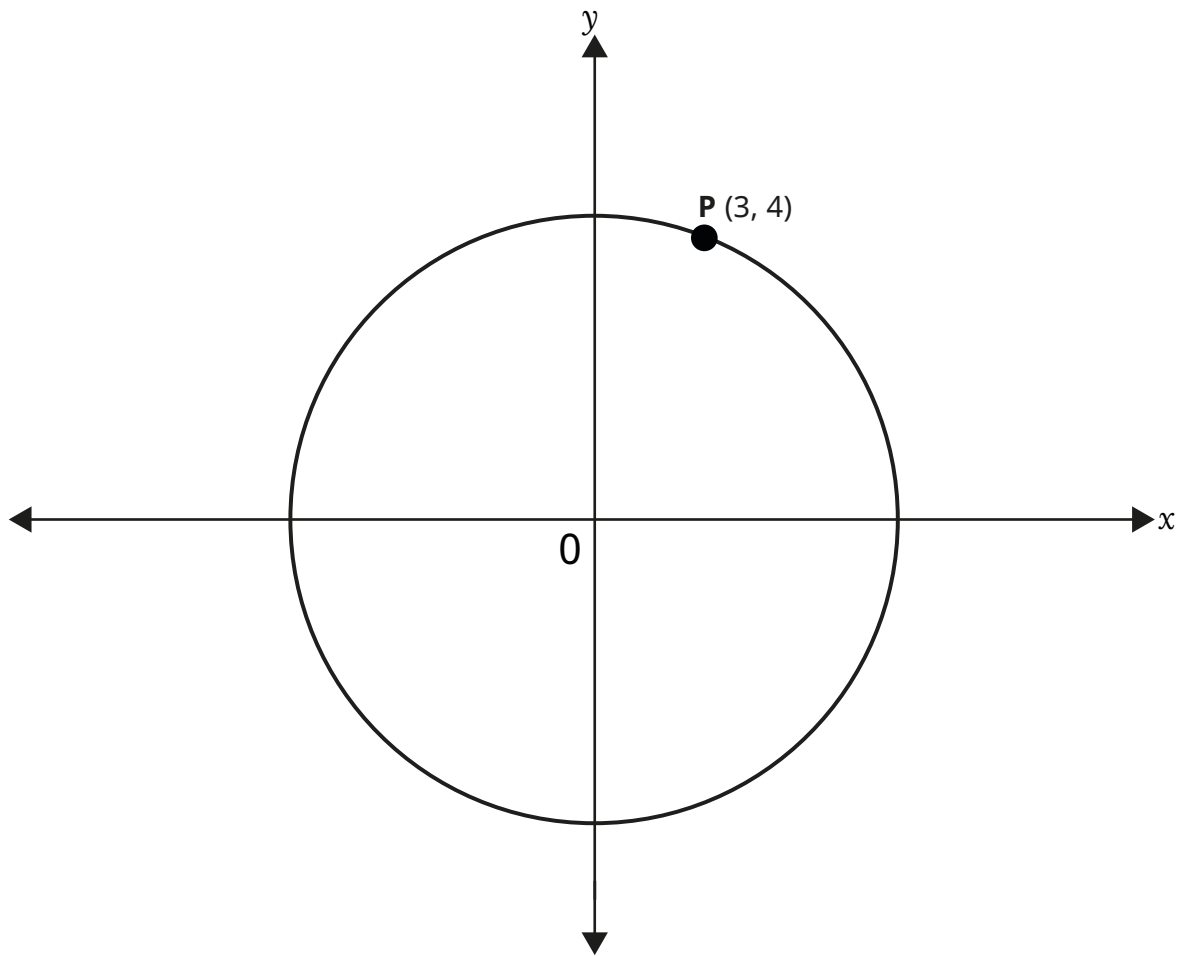
22 In quadrilateral PQRS, $\vec{PQ} = 2\vec{RS}$.

What type of quadrilateral must PQRS be?

_____ (1 mark)

23 P is the point (3, 4) on the circle $x^2 + y^2 = 25$

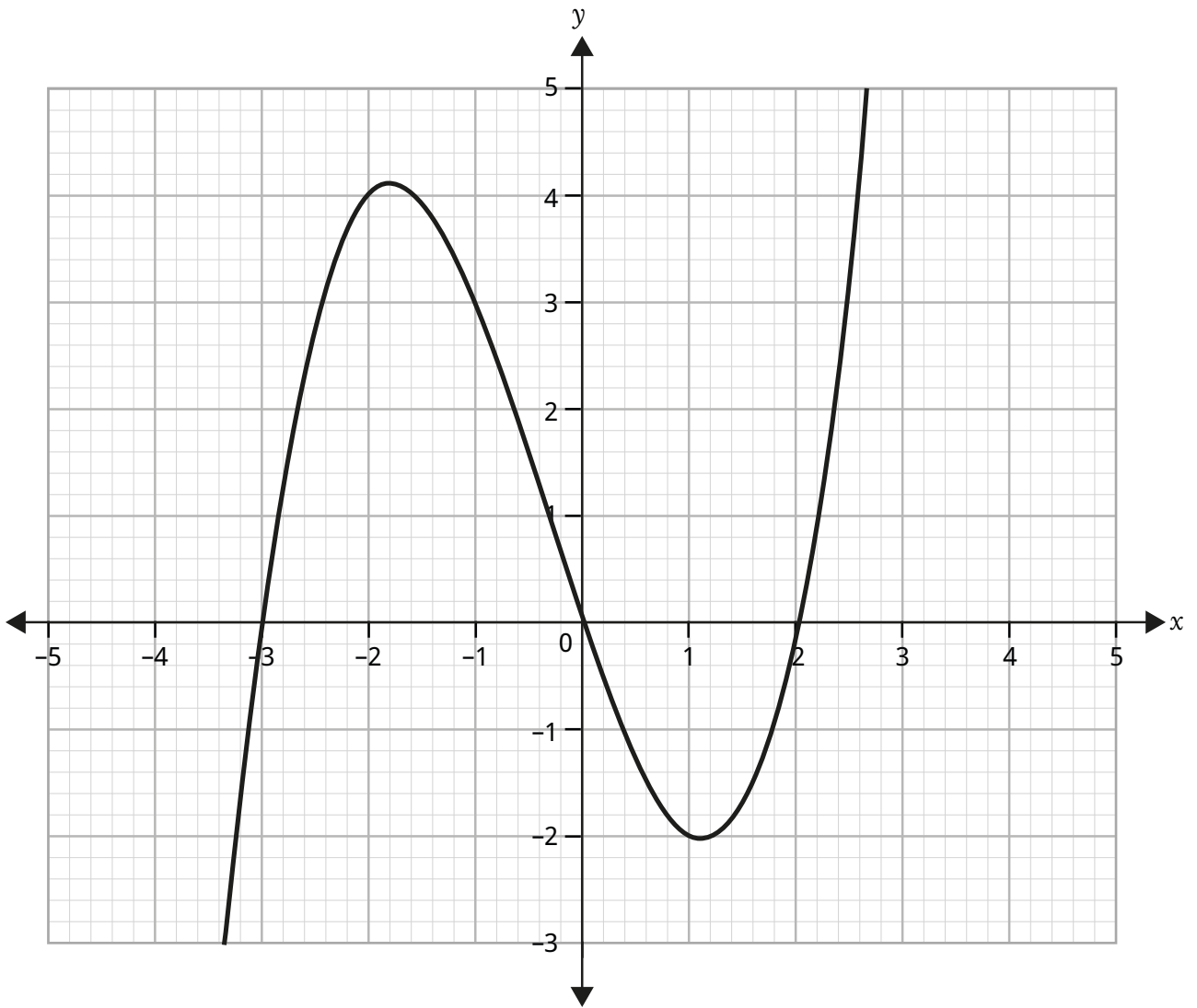
*diagram not
drawn accurately*



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

(4 marks)

24 Here is part of a curve.



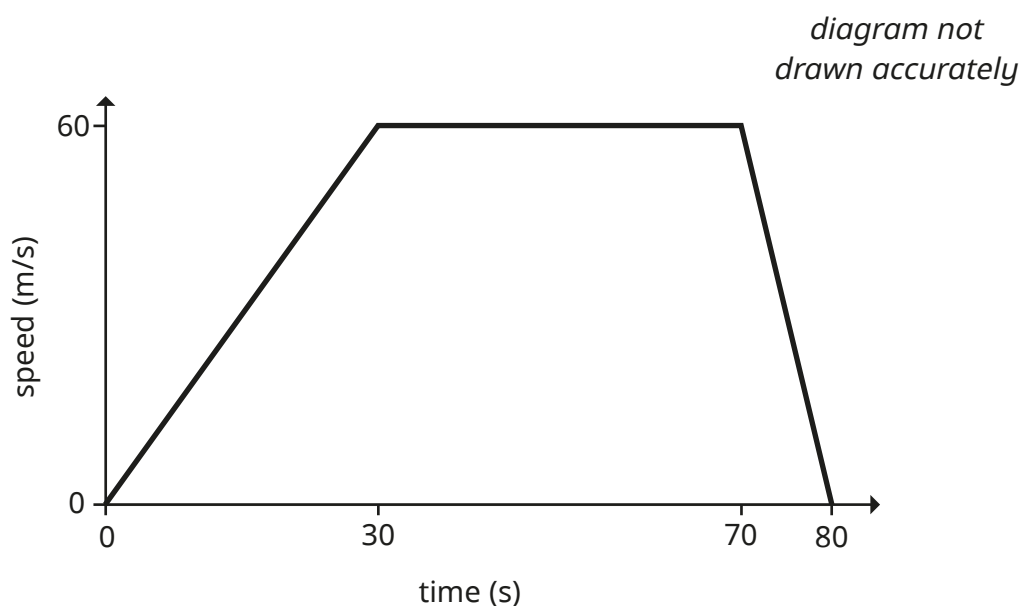
Estimate the gradient of the curve at the point where $x = -1$

(2 marks)

25 Write $\frac{x^2 + 4x - 12}{2x^2 - 7x + 6}$ in the form $\frac{x + a}{bx + c}$, where a , b and c are integers.

(3 marks)

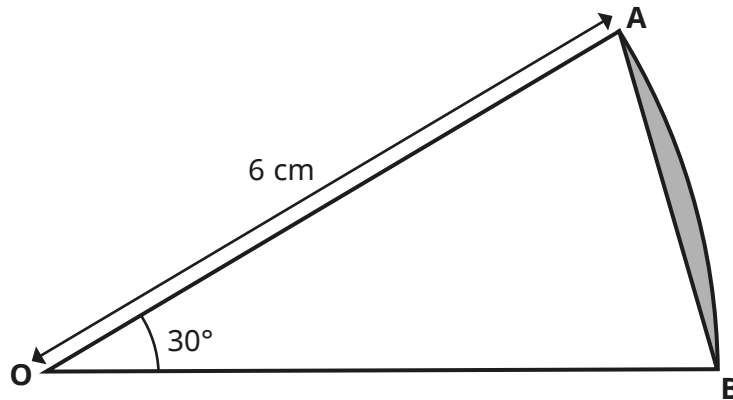
26 The graph shows the speed of a train between two stations.



Calculate the distance between the two stations.
Give your answer in kilometres.

(3 marks)

- 27** Points A and B lie on the circumference of a circle, centre O.
Angle AOB = 30°



Work out the exact area of the shaded segment.

(4 marks)