Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2025

Mathematics

StemUp Model Solution

Unit M6 Paper 2
(With calculator)
Foundation Tier



[GMC62]

GMC62

WEDNESDAY 4 JUNE, 10.45am – 11.45am

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided.
Do not write outside the boxed area on each page, on blank pages or tracing paper.
Complete in black ink only. **Do not write with a gel pen.**
Questions which require drawing or sketching should be completed using an HB pencil.
All working **must** be clearly shown in the spaces provided. Marks may be awarded for partially correct solutions.
You **may** use a calculator for this paper.
Answer **all fifteen** questions.

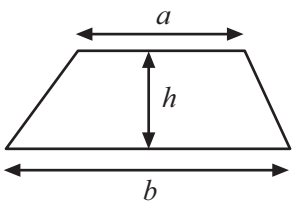
INFORMATION FOR CANDIDATES

The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a calculator, ruler, compasses and a protractor.
The Formula Sheet is on page 2.

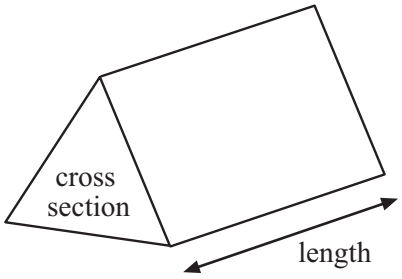
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Formula Sheet

Area of trapezium $= \frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length



15918

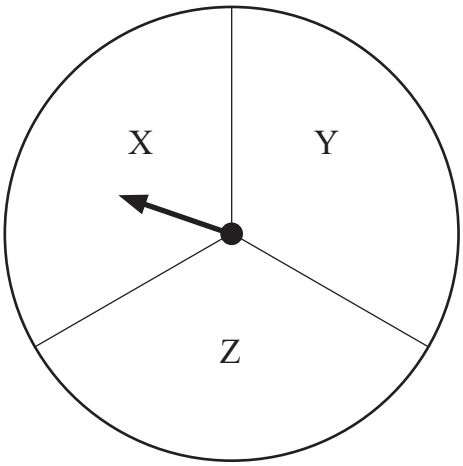
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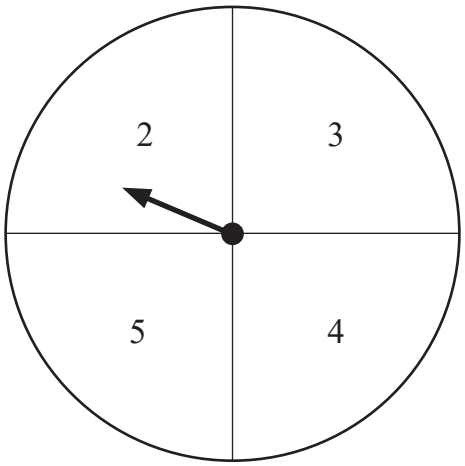
(Questions begin overleaf)

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1



Spinner A



Spinner B

Spinners A and B are spun together.

(a) One possible outcome is X2

List all the other possible outcomes.

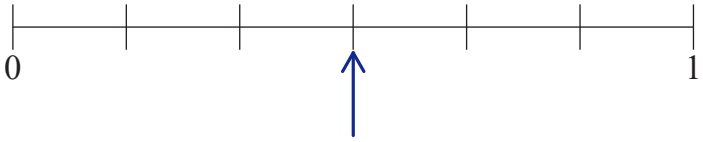
X2 X3 X4 X5

Y2 Y3 Y4 Y5

22 23 24 25

[2]

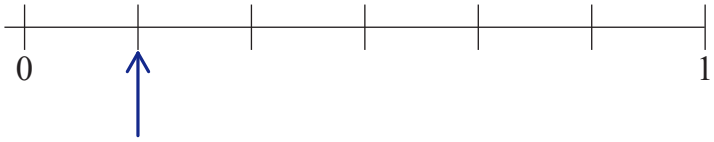
(b) Mark, **with an arrow** on the probability scale, the chance of getting an even number on Spinner B.



[1]

P(even) = 2 out of 4 = 1/2

(c) Mark, **with an arrow** on the probability scale, the chance of getting a Y on Spinner A **and** an even number on Spinner B.



[1]

P(Y) = 1/3, P(Y and even) = 1/3 × 1/2 = 1/6

[Turn over

2 Dave walks 24 000 steps at the weekend.

He knows that 1500 steps are equal to 1 kilometre.

How many **miles** does Dave walk?



24000 ÷ 1500 = 16 km

5 miles = 8 km

16 km ÷ 8 = 2

2 × 5 = 10 miles

Answer 10 miles [3]

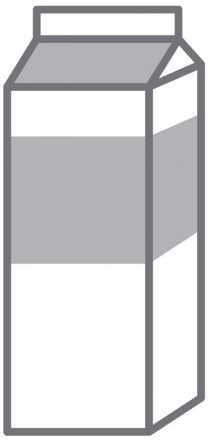
3 A shop sells juice in three different sizes.



0.5 litres cost £0.95



1.5 litres cost £2.88



2 litres cost £3.90

Which size offers best value?

Show your working out clearly.

0.5 litres: 0.95 × 2 = £1.90 per litre

1.5 litres: 2.88 ÷ 1.5 = £1.92 per litre

2 litres: 3.90 ÷ 2 = £1.95 per litre

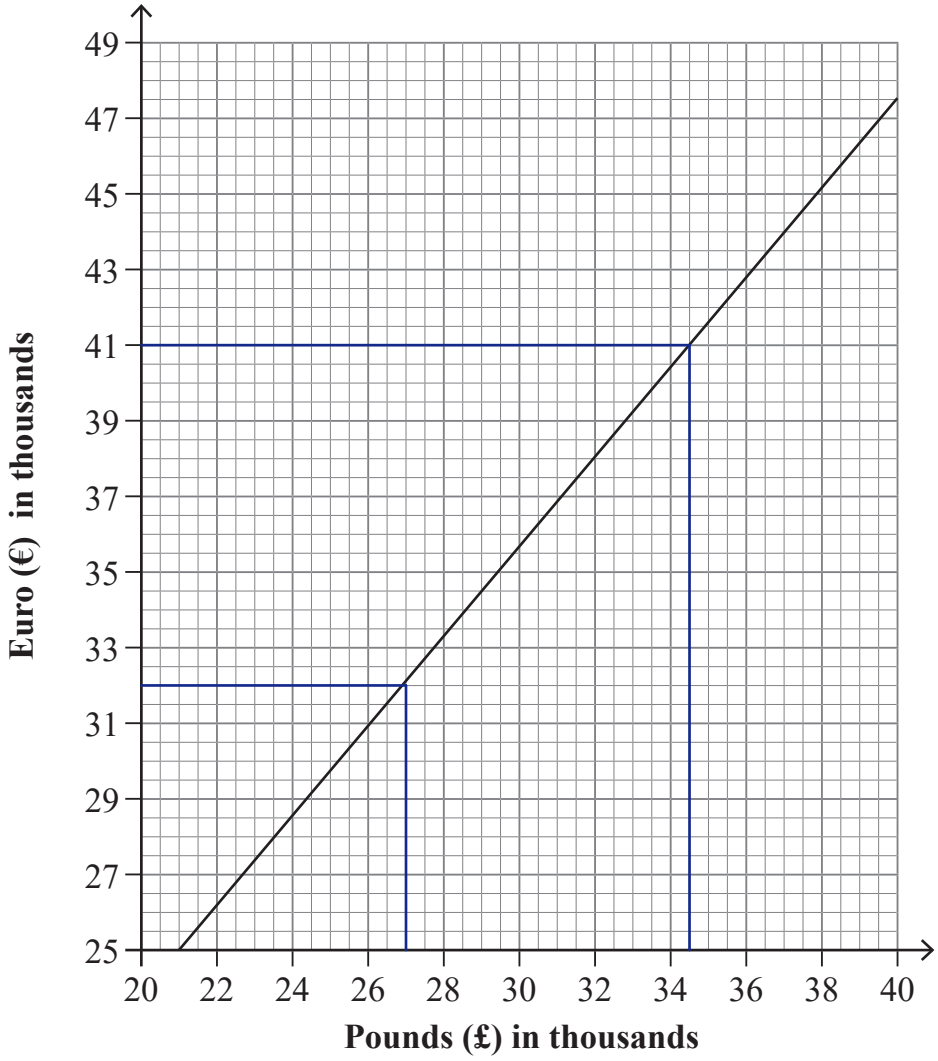
£1.90 is the cheapest per litre,

so 0.5 litres is best value

Answer 0.5 litres [4]

[Turn over

4 This is a conversion graph between pounds (£) and euros (€).



(a) Melanie works in Dublin and earns €41 000 a year.

Convert €41 000 to pounds (£).

€41 000 → £34 500 (read from graph)

Answer £ 34 500 [1]

(b) Melanie buys a car costing €16000

How many pounds (£) is this?

€32 000 = £27 000 (from graph)

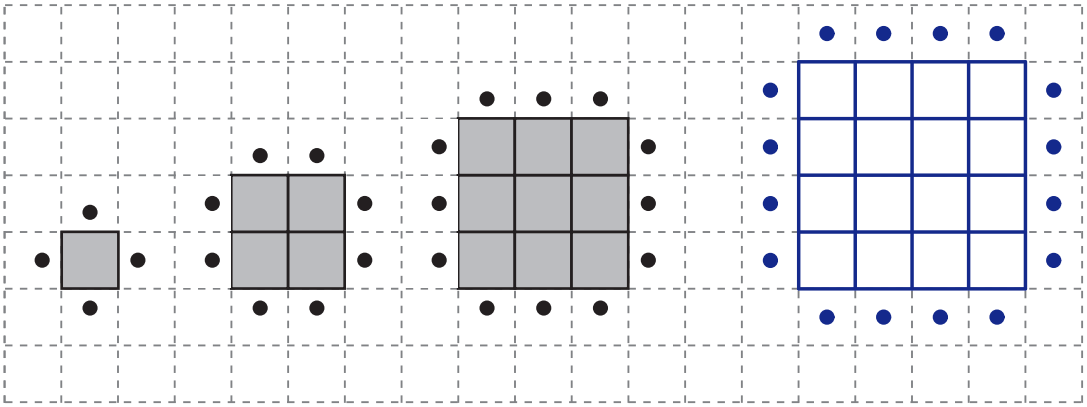
€16 000 = half of €32 000

£27 000 ÷ 2 = £13 500

Answer £ 13 500 [2]

[Turn over

5 **(a)** Draw Pattern 4 in the space provided.



Pattern 1 Pattern 2 Pattern 3 Pattern 4

[1]

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of squares	1	4	9	16	25
Number of dots	4	8	12	16	20

[2]

(c) A pattern has 81 squares.

What is the pattern number?

squares = n^2, $n^2 = 81$

$n = \sqrt{81} = 9$

Answer 9 [1]

(d) A pattern has 32 dots.

How many **squares** does it have?

dots = 4 × pattern number

32 ÷ 4 = 8, so Pattern 8

squares = 8^2 = 64

Answer *64* [1]

[Turn over

6 Shona plans to roll two fair dice together a number of times.

She makes out a table of possible scores that she can get when she rolls the two dice as shown.

Dice 1 \ Dice 2	**1**	**2**	**3**	**4**	**5**	**6**
1	0	1	2	3	4	5
2	1	0	1	2	3	4
3	2	1	0	1	2	3
4	3	2	1	0	1	2
5	4	3	2	1	0	1
6	5	4	3	2	1	0

(a) What does Shona do with the two numbers on the dice to get her scores?

Answer *She finds the difference between the two numbers* [1]

(b) What is the most likely score that Shona will get?

Answer *1* [1]

(c) What is the probability of the score being a 2?

eight 2s out of 36 outcomes

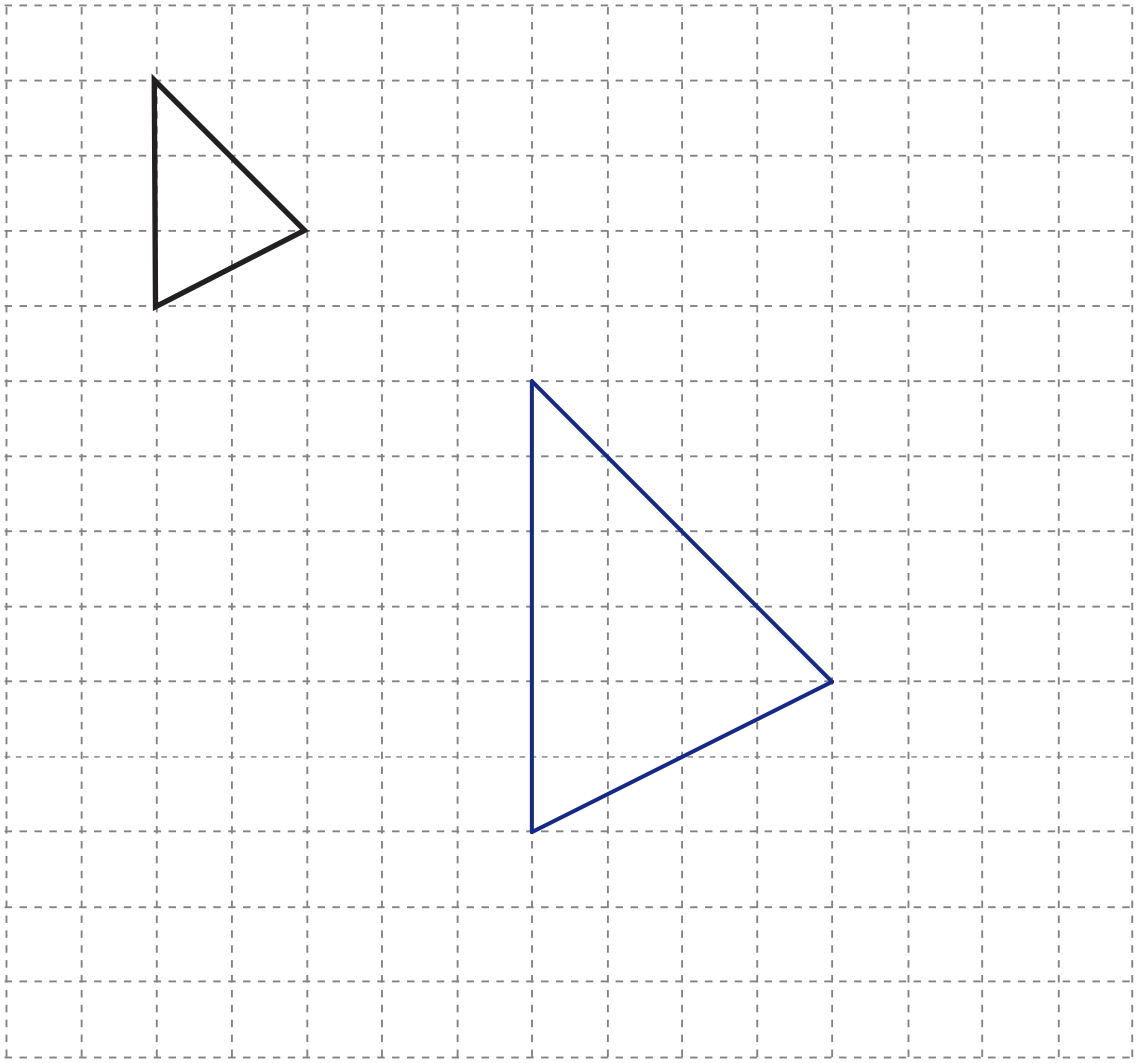
Answer $\frac{8}{36}$ [1]

(d) What is the probability of the score being greater than 3?

4s: 4, 5s: 2, so 6 out of 36

Answer $\frac{6}{36}$ [1]

7 Enlarge the triangle using a scale factor of 2



[2]

[Turn over

8 Clive won £800 prize money.

He spent 70% of it.

He shared the rest between two friends in the ratio 1 : 4

How much did each friend get?

70% of 800 = 0.7 × 800 = £560

Rest = 800 − 560 = £240

1 + 4 = 5 parts

1 part = 240 ÷ 5 = £48

4 parts = 48 × 4 = £192

Answer £ 48 , £ 192 [5]



9 Jill either walks or drives to work.

The probability that Jill walks to work is $\frac{1}{5}$

She is due to work 235 days next year.

Work out the number of days Jill is expected to drive to work next year.

Show your working out clearly.

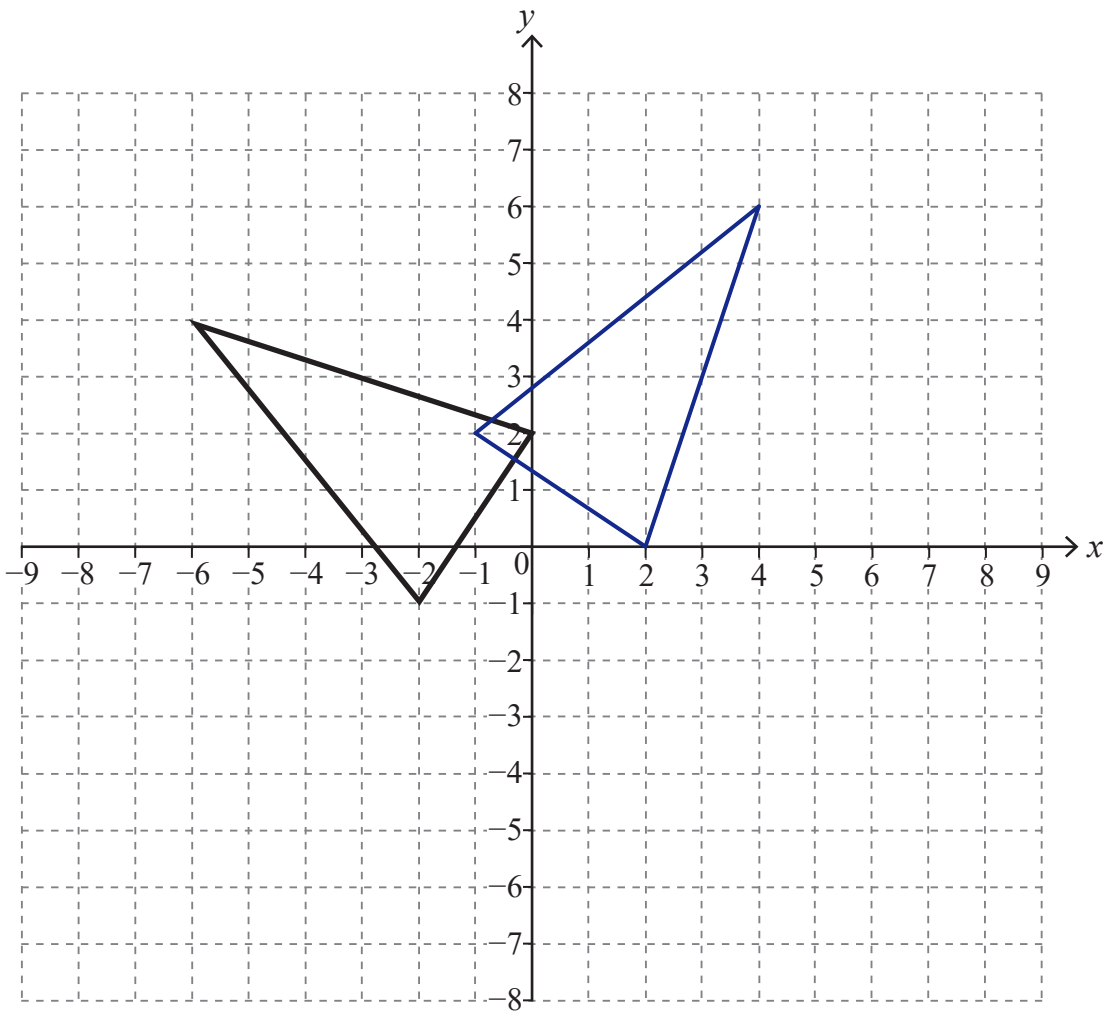
Walks: 235 ÷ 5 = 47 days

Drives: 235 − 47 = 188 days

Answer 188 days [2]

[Turn over

10 Rotate the triangle shown 90° clockwise about the origin.



[3]

(−6, 4) → (4, 6) (0, 2) → (2, 0) (−2, −1) → (−1, 2)

11 A spinner is spun 400 times.

The table shows some of the numbers of times it landed on the number 4 and some of the relative frequency values.

Number of spins	Number of fours	Relative frequency
100	20	0.2
200	39	0.195
300	72	0.24
400	102	0.255

(a) Calculate the missing relative frequency value.

39 ÷ 200 = 0.195

Answer 0.195 [1]

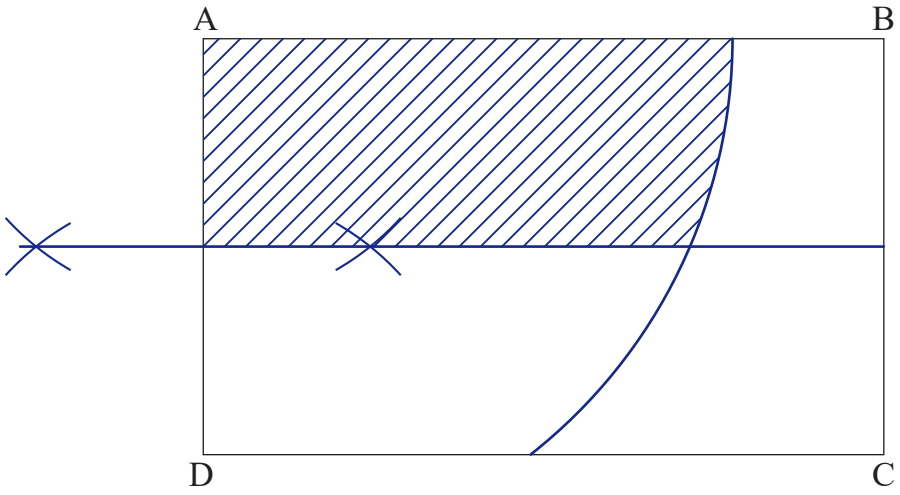
(b) Calculate the number of times it landed on 4 for the first 300 spins.

0.24 × 300 = 72

Answer 72 [1]

[Turn over

12



ABCD is a rectangle.

Shade the region inside the rectangle which is closer to AB than to DC and less than 7 cm from A.

[3]

13 Fill in the blanks.

(a) $d^{12} \div d^3 = d^{\boxed{9}}$ $12 - 3 = 9$

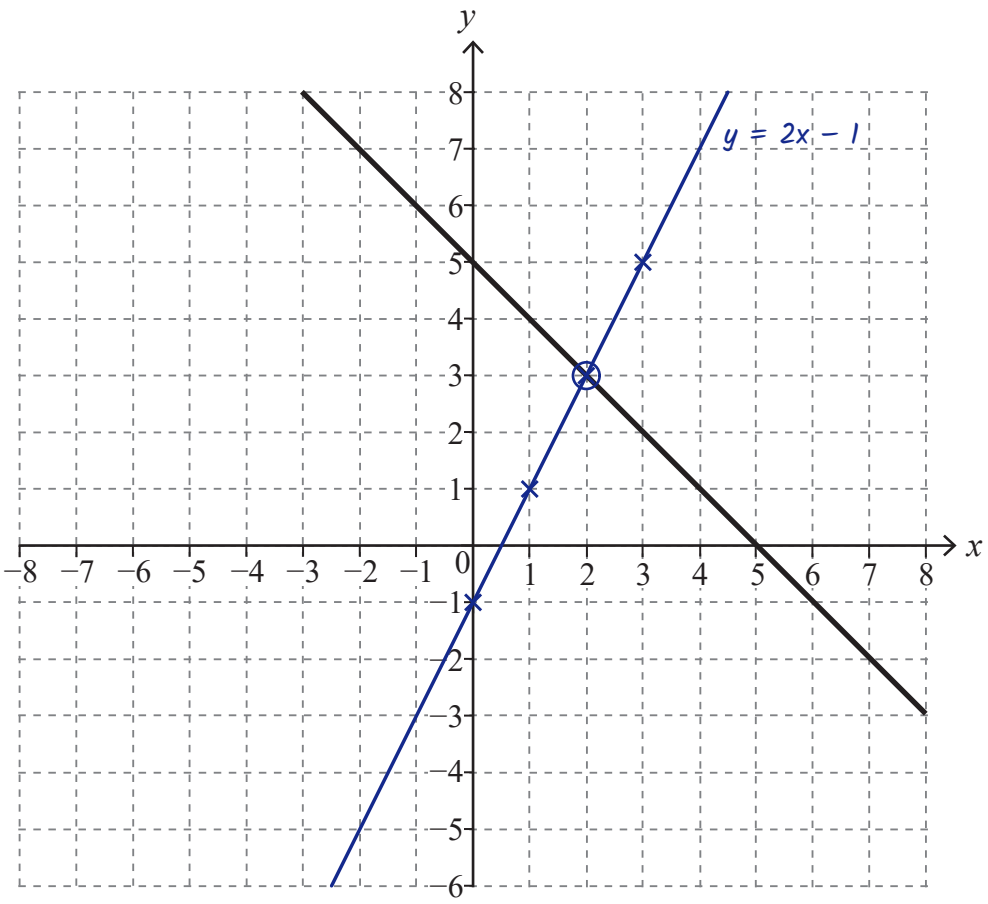
(b) $d^2 \times d^{\boxed{6}} = d^8$ $8 - 2 = 6$

(c) $\dfrac{d^{30}}{(d^2)^5} = d^{\boxed{20}}$ $(d^2)^5 = d^{10}$, $30 - 10 = 20$

[3]

14 By drawing a suitable line on the grid, solve the simultaneous equations

$$y = 5 - x \quad \text{and} \quad y = 2x - 1$$



$y = 2x - 1$: $x = 0, 1, 2, 3 \rightarrow y = -1, 1, 3, 5$

Lines cross at (2, 3)

Answer $x =$ 2 $y =$ 3 [4]

[Turn over

15 Solve the inequality $3(2x + 1) < 8$

$3(2x + 1) < 8$

$6x + 3 < 8$

$6x < 5$

$x < \frac{5}{6}$

Answer $x < \frac{5}{6}$ [3]

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