Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2025

Mathematics

StemUp Model Solution

Unit M5 Paper 2
(With calculator)
Foundation Tier

[GMC52]



GMC52

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.

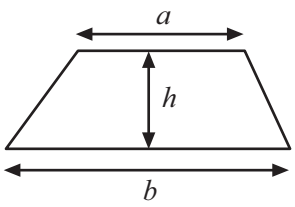
INFORMATION FOR CANDIDATES

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.

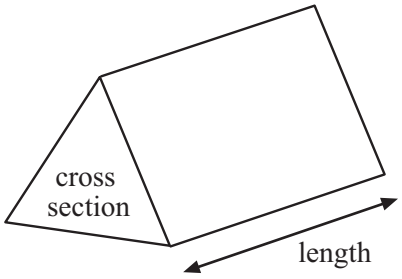
15916

Formula Sheet

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

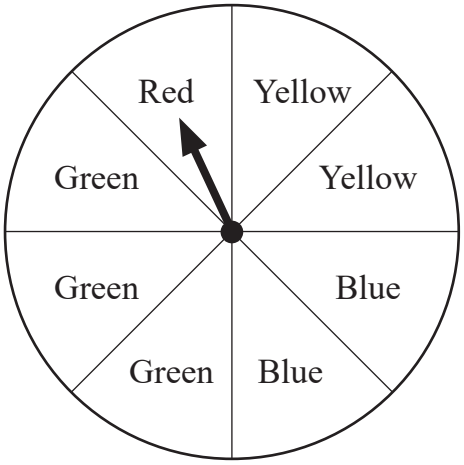


Volume of prism = area of cross section × length



15916

1 The spinner below is spun.



(a) On which colour is the spinner **most likely** to land?

Answer green [1]

(b) On which colour is the spinner **least likely** to land?

Answer red [1]

(c) On which **two** colours is the spinner **equally likely** to land?

Answer blue and yellow [1]

(d) What word describes the possibility of the spinner landing on the colour black?

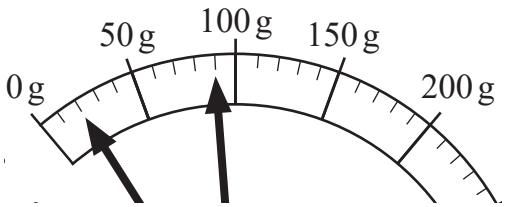
Answer impossible [1]

[Turn over

2 A gold miner finds two gold nuggets.

Their weights are shown on the scale below.

What is the difference in their weights?



Nuggets weigh 20 g and 90 g
90 – 20 = 70

Answer _____*70*_____ g [2]

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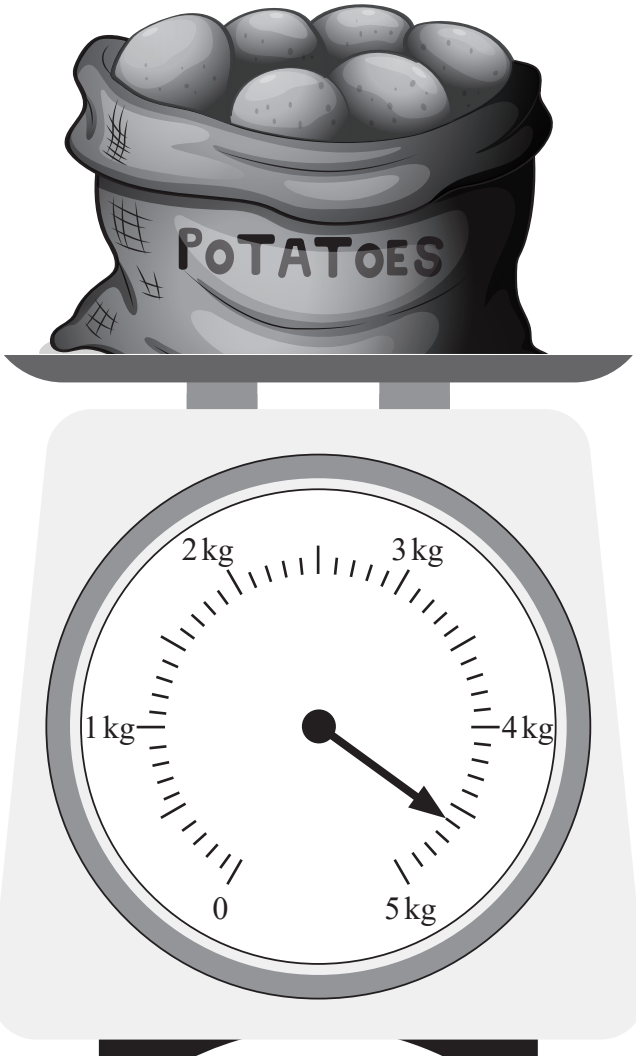
DO NOT WRITE ON THIS PAGE

(Questions continue overleaf)

[Turn over

3 **(a)** Tracey believes her 5kg bag of potatoes to be underweight.

She puts them on scales to check.



How many kilograms underweight is the bag of potatoes?

Scale reads 4.6 kg
5 − 4.6 = 0.4

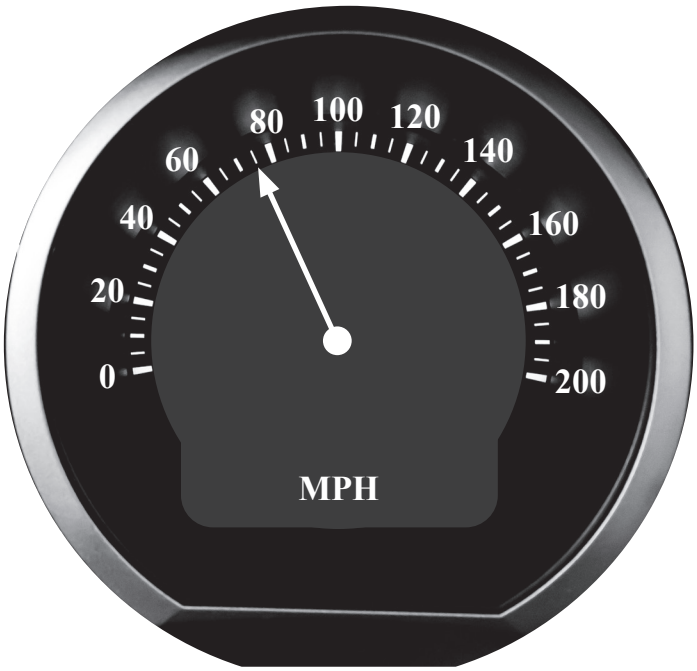
Answer 0.4 kg [2]

15916

(b) Kevin is driving his car.

The speed limit is 60mph.

His speedometer is shown below.



By how much is Kevin above the speed limit?

Speedometer reads 75 mph
75 − 60 = 15

Answer *15* mph [2]

[Turn over

4 Ava and Jake get some new items of clothing for Christmas.

Ava	Price
Jacket	£41.75
Shoes	£48.30
T-shirt	£18.89

Jake	Price
Socks	£9.75
Tracksuit	£39.70
Shorts	£18.99

Use **estimation** to show that Ava's items cost approximately £40 more than Jake's.

Ava: 40 + 50 + 20 = £110

Jake: 10 + 40 + 20 = £70

110 − 70 = £40

So Ava's items cost approximately £40 more than Jake's

[3]

5 **(a)** What is the name of this sequence of numbers?

1, 8, 27, 64, 125 …

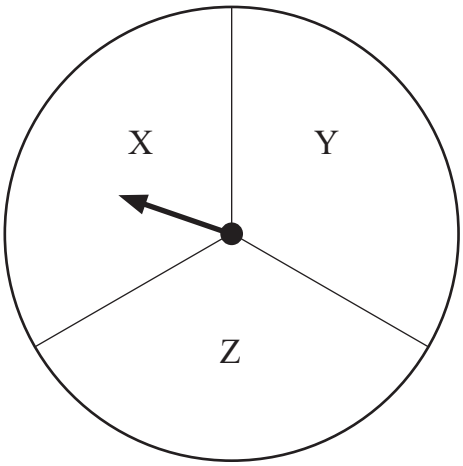
Answer cube numbers [1]

(b) Write down the next term in the sequence.

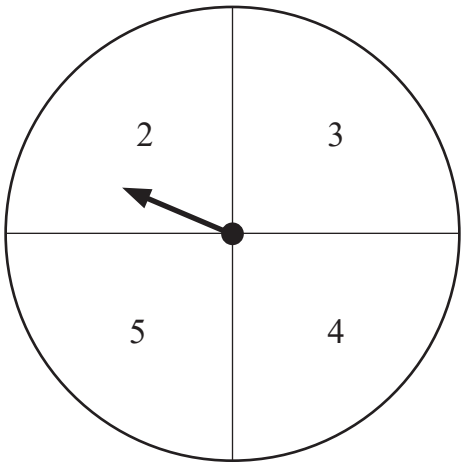
114, 108, 102, 96 [1]

[Turn over

6



Spinner A



Spinner B

Spinners A and B are spun together.

(a) One possible outcome is X2

List all the other possible outcomes.

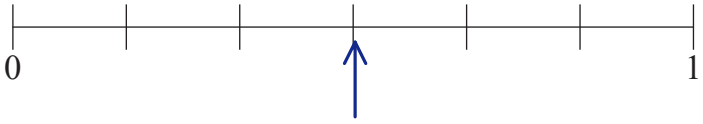
X2 X3 X4 X5

Y2 Y3 Y4 Y5

Z2 Z3 Z4 Z5

[2]

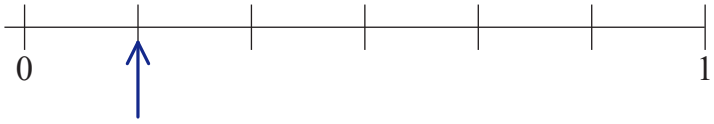
(b) Mark, **with an arrow** on the probability scale, the chance of getting an even number on Spinner B.



[1]

P(even) = 2/4 = 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 and even) = 1/3 × 1/2 = 1/6

[Turn over

7 Dave walks 24 000 steps at the weekend.

He knows that 1500 steps are equal to 1 kilometre.

How many **miles** does Dave walk?



24 000 ÷ 1500 = 16 km

8 km = 5 miles

16 ÷ 8 × 5 = 10 miles

Answer 10 miles [3]

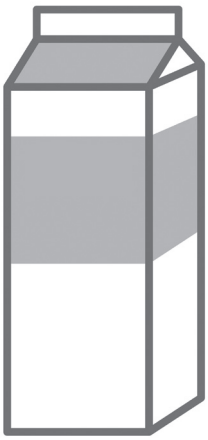
8 A shop sells juice in three different sizes.



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

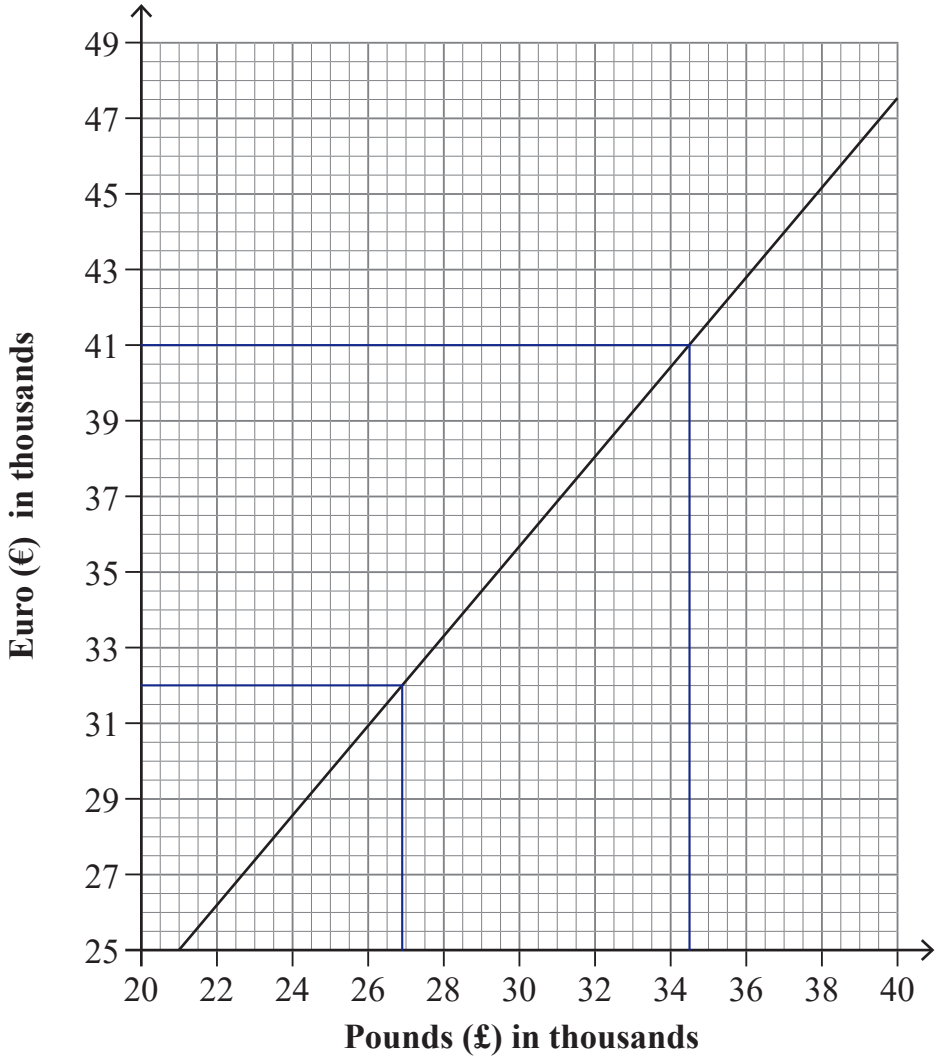
2 litres: 3.90 ÷ 2 = £1.95 per litre

£1.90 is the cheapest per litre, so 0.5 litres

Answer 0.5 litres [4]

[Turn over

9 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 (from graph)

Answer £ 34 500 [1]

(b) Melanie buys a car costing €16000

How many pounds (£) is this?

€32 000 = £27 000 (from graph)

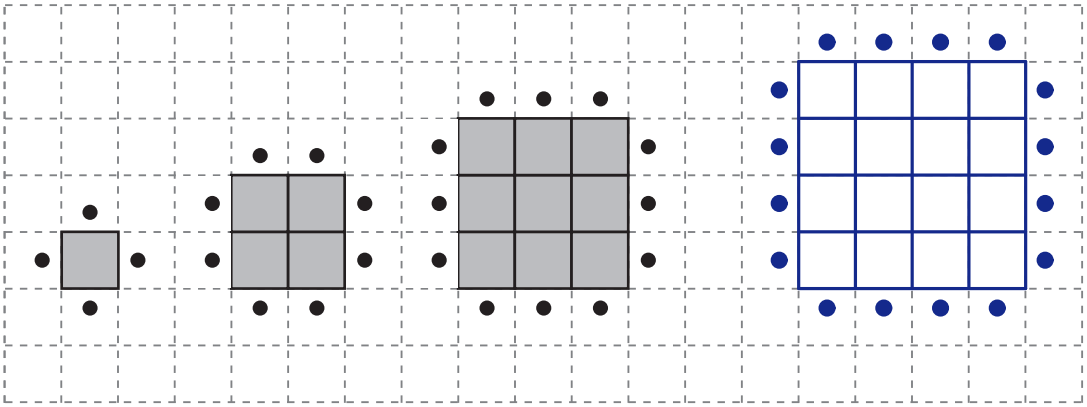
€16 000 is half of €32 000

£27 000 ÷ 2 = £13 500

Answer £ 13 500 [2]

[Turn over

10 **(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 × n, 9 × 9 = 81

Answer 9 [1]

(d) A pattern has 32 dots.

How many **squares** does it have?

dots = 4 × pattern number

32 ÷ 4 = 8

8 × 8 = 64 squares

Answer *64* [1]

[Turn over

11 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?

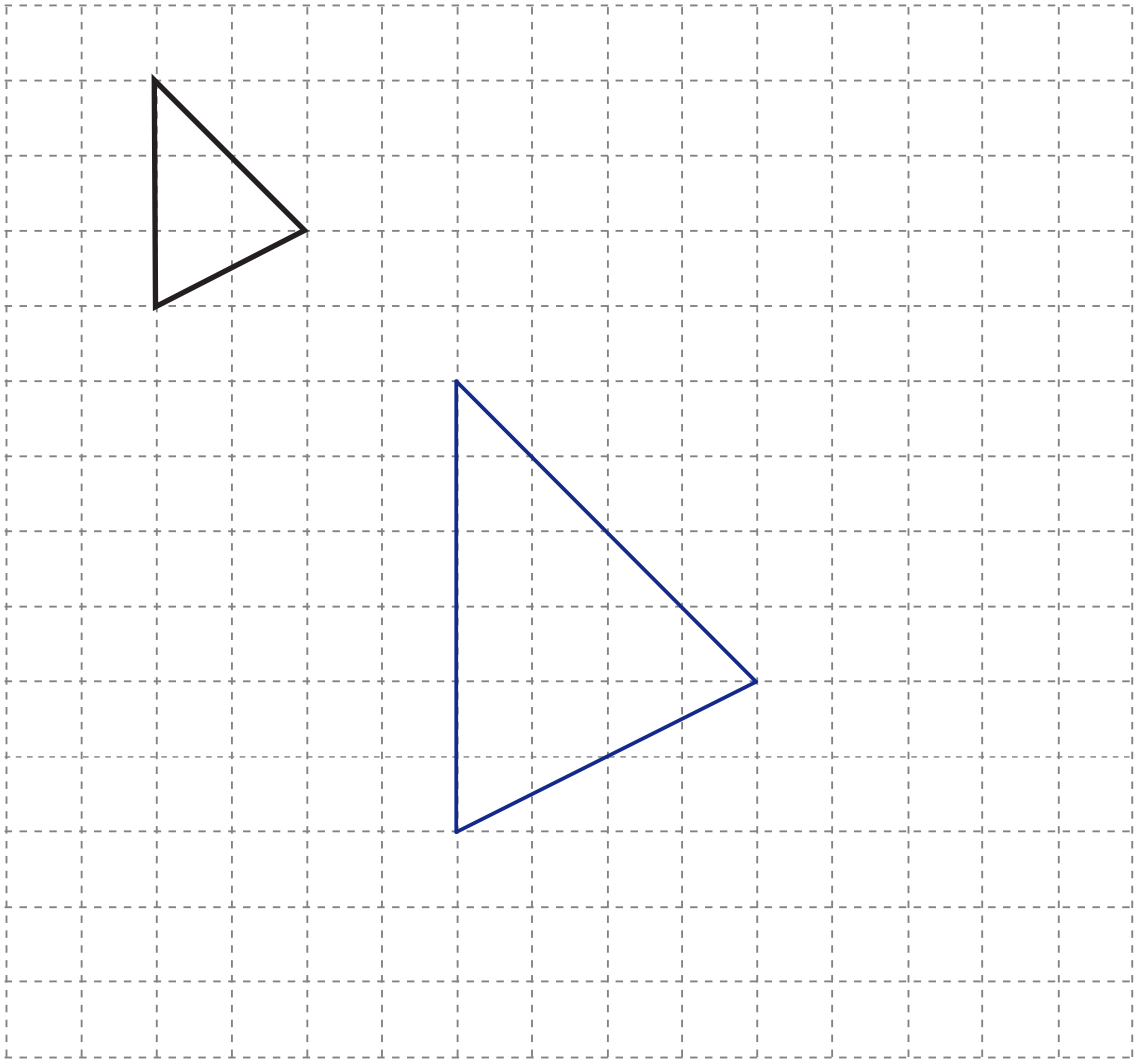
Answer $\frac{8}{36}$ [1]

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

scores 4 and 5: 4 + 2 = 6 outcomes

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

12 Enlarge the triangle using a scale factor of 2



[2]

[Turn over

13 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 spent

800 − 560 = £240 left

1 + 4 = 5 parts: 240 ÷ 5 = £48

48 × 4 = £192

Answer £ 48 , £ 192 [5]



14 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.

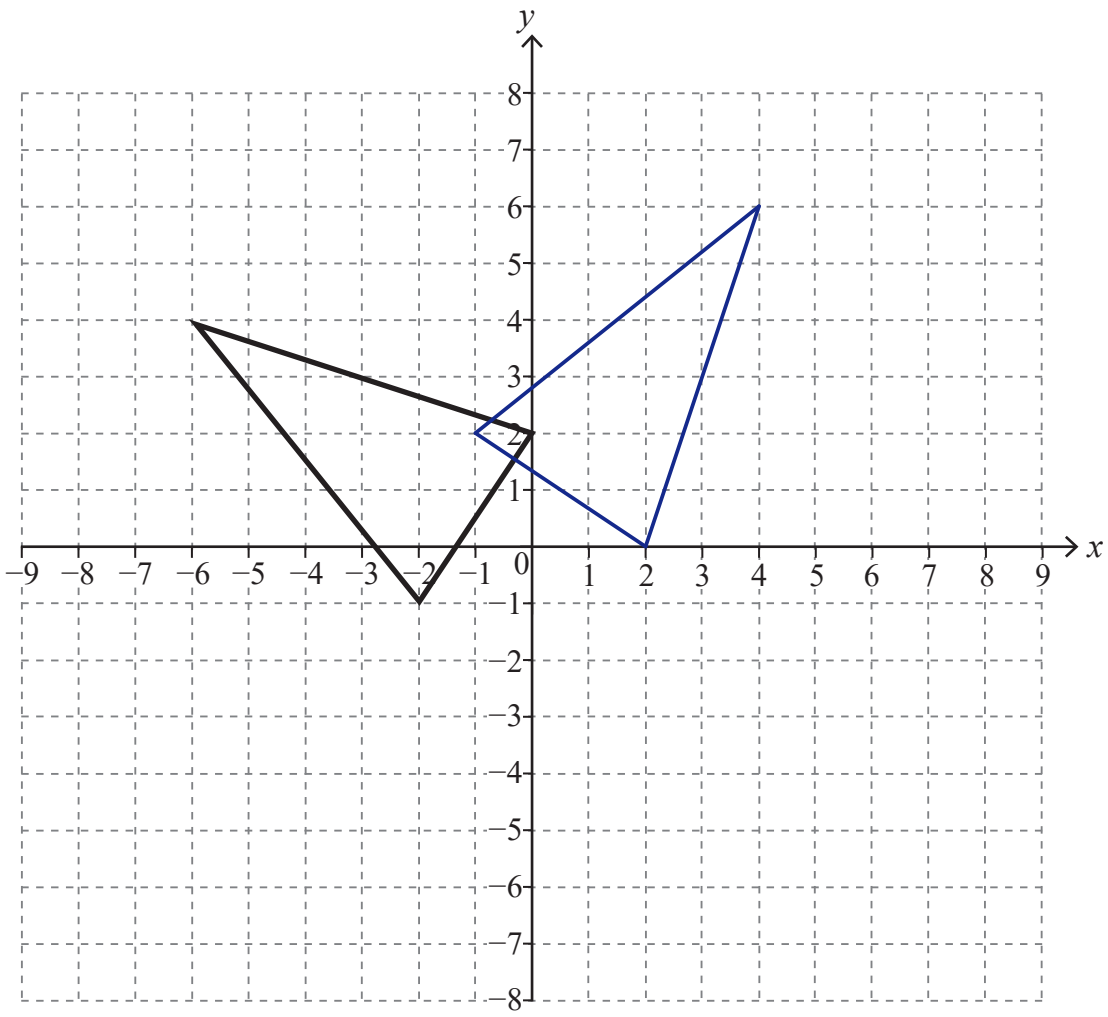
She walks: 235 ÷ 5 = 47 days

She drives: 235 − 47 = 188 days

Answer 188 days [2]

[Turn over

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



[3]

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

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