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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2015

# Mathematics

Unit T5 Paper 2
**(With calculator)**
Foundation Tier

**MV18**

**[GMT52]**

**TUESDAY 26 MAY, 3.00pm–4.00pm**

## TIME

1 hour, plus your additional time allowance.

## 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.**
Complete in blue or black ink only.
Answer **all twelve** questions.
Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.
You **may** use a calculator for this paper.

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## INFORMATION FOR CANDIDATES

The total mark for this paper is 50.
Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in Questions **4** and **10**.
You should have a calculator, ruler, compasses and a protractor.
The Formula Sheet is on page 3.

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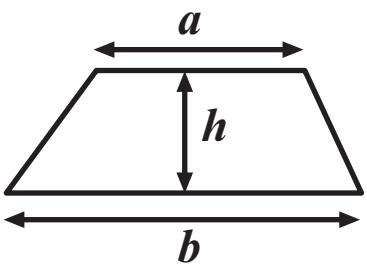
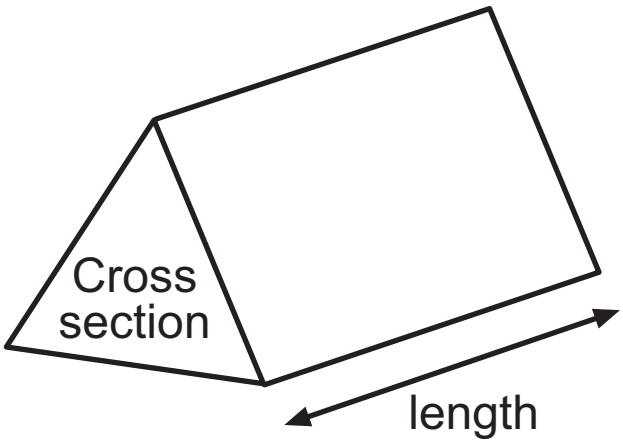
# Formula Sheet

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




**Volume of prism =** area of cross section × length



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**1** A manager wishes to buy new uniforms for his 30 staff.
A shirt costs **£**8.15 and trousers cost **£**19.95

**(a)** **Estimate** the total cost of the uniforms. [2 marks]
**Show all steps of your working clearly.**

Answer **£** _____

**(b)** Without any further calculation, decide whether your estimate will be an overestimate or an underestimate of the exact cost. [2 marks]
**Explain your reasoning clearly.**

_____

_____

_____

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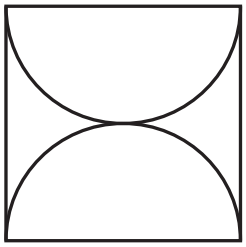
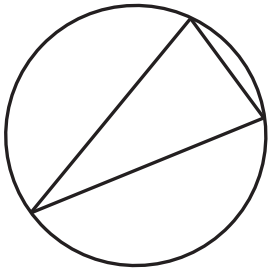
**2** **(a)** How many lines of symmetry does each diagram have? [3 marks]

**(i)**



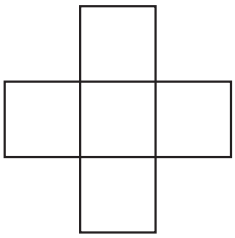
Answer _____

**(ii)**



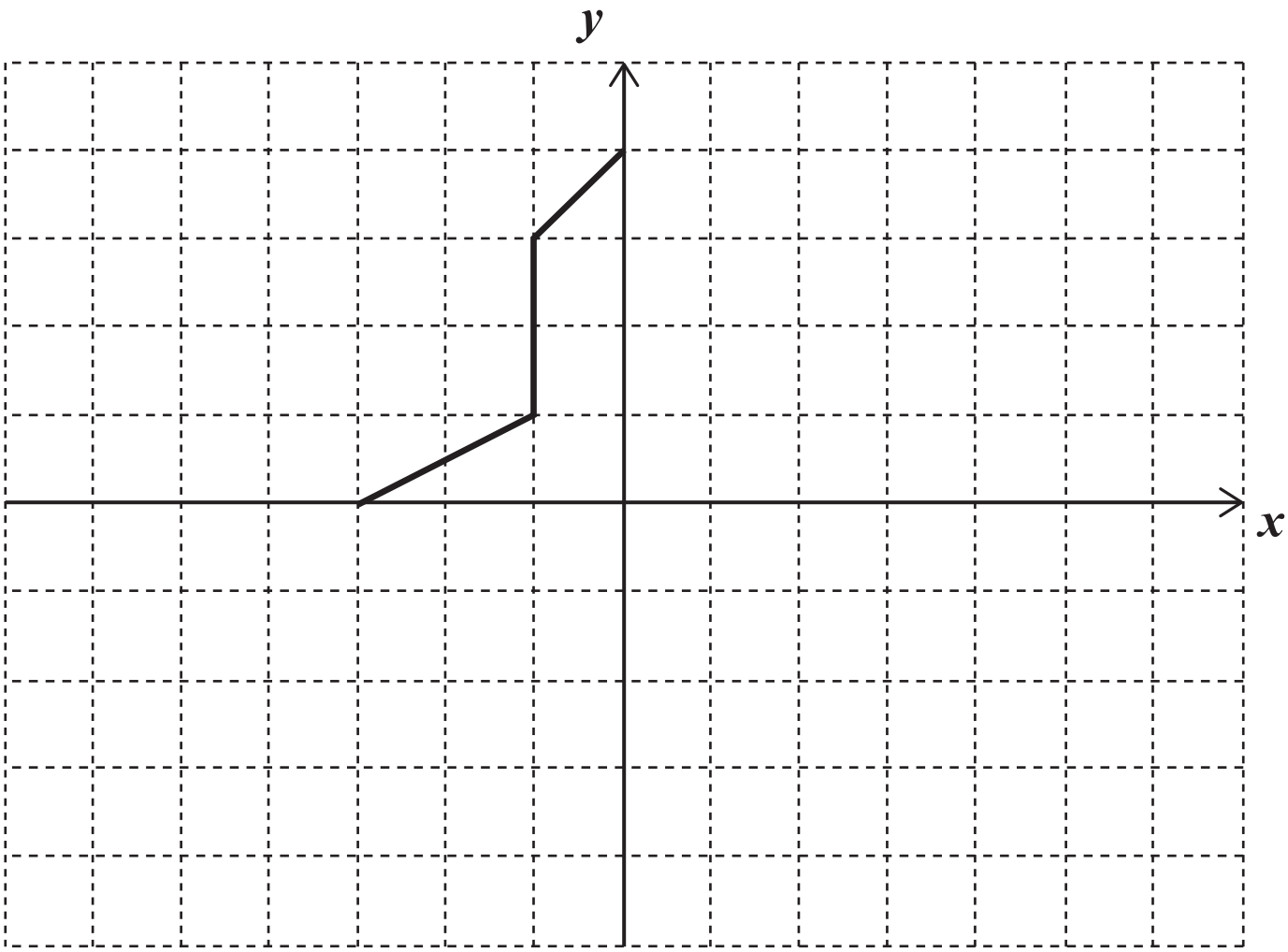
Answer _____

**(iii)**



Answer _____

**(b)** Complete the diagram so that both axes are lines of symmetry. [3 marks]



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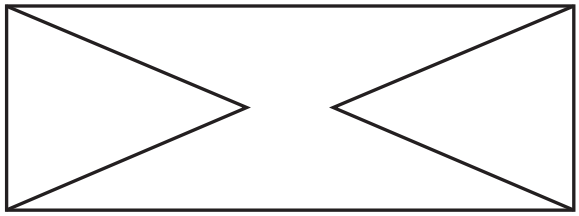
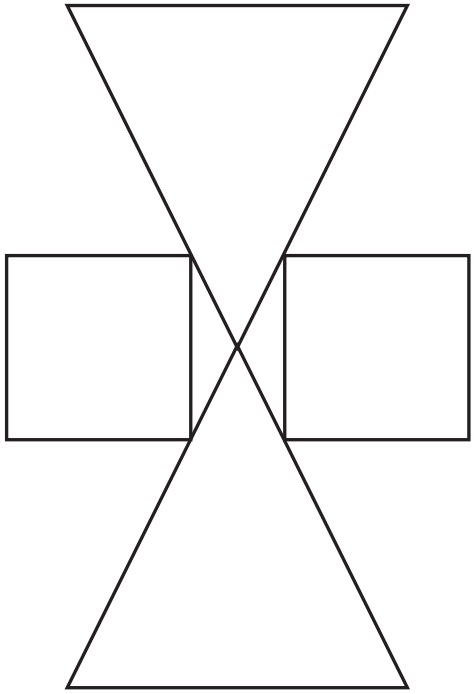
**(c)** Write down the order of rotational symmetry for each shape below.

**(i)**



Answer _____ [1 mark]

**(ii)**



Answer _____ [1 mark]

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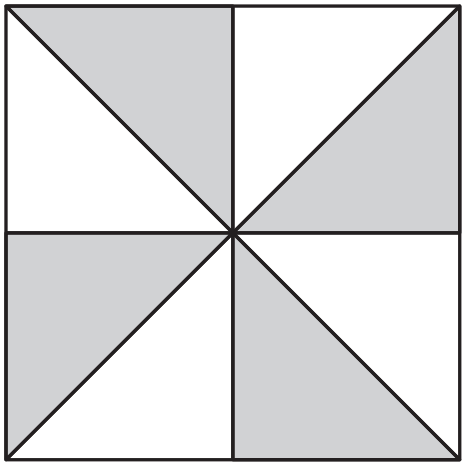
(iii) 

Answer _____ [1 mark]

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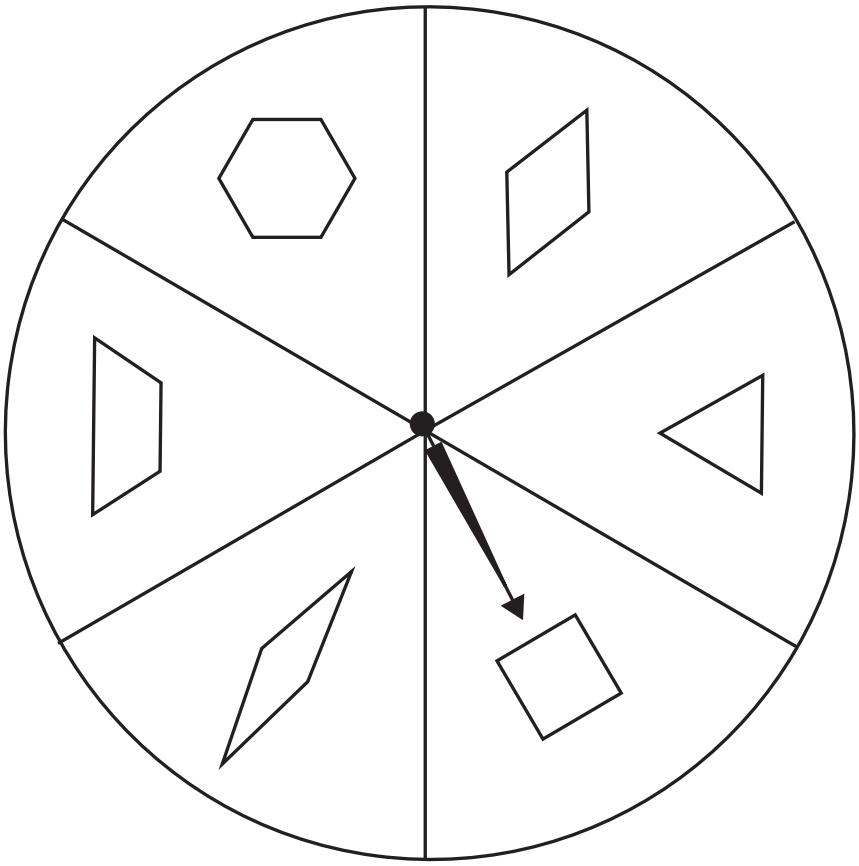
**3**



Sara spins a fair spinner with some shapes drawn on it.

What is the probability of Sara getting a shape which

**(a)** has 4 sides, [1 mark]

Answer _____

**(b)** has less than 3 sides, [1 mark]

Answer _____

**(c)** has less than 4 sides? [1 mark]

Answer _____

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**Quality of written communication will be assessed in this question.**

**4** Len keeps petrol for his lawnmower in a 5 litre can.
Gary has 1 gallon of petrol in another can.
Gary starts to pour his petrol into Len's empty can.
Will Gary be able to pour all his petrol into Len's can?
[3 marks]

Use 50 litres **=** 11 gallons

**Show clearly all your working.**

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**5** Grapes cost **£**3.25 per kilogram.
Calculate the cost of one pound (1 **lb**) of grapes. [3 marks]

Answer **£** _____

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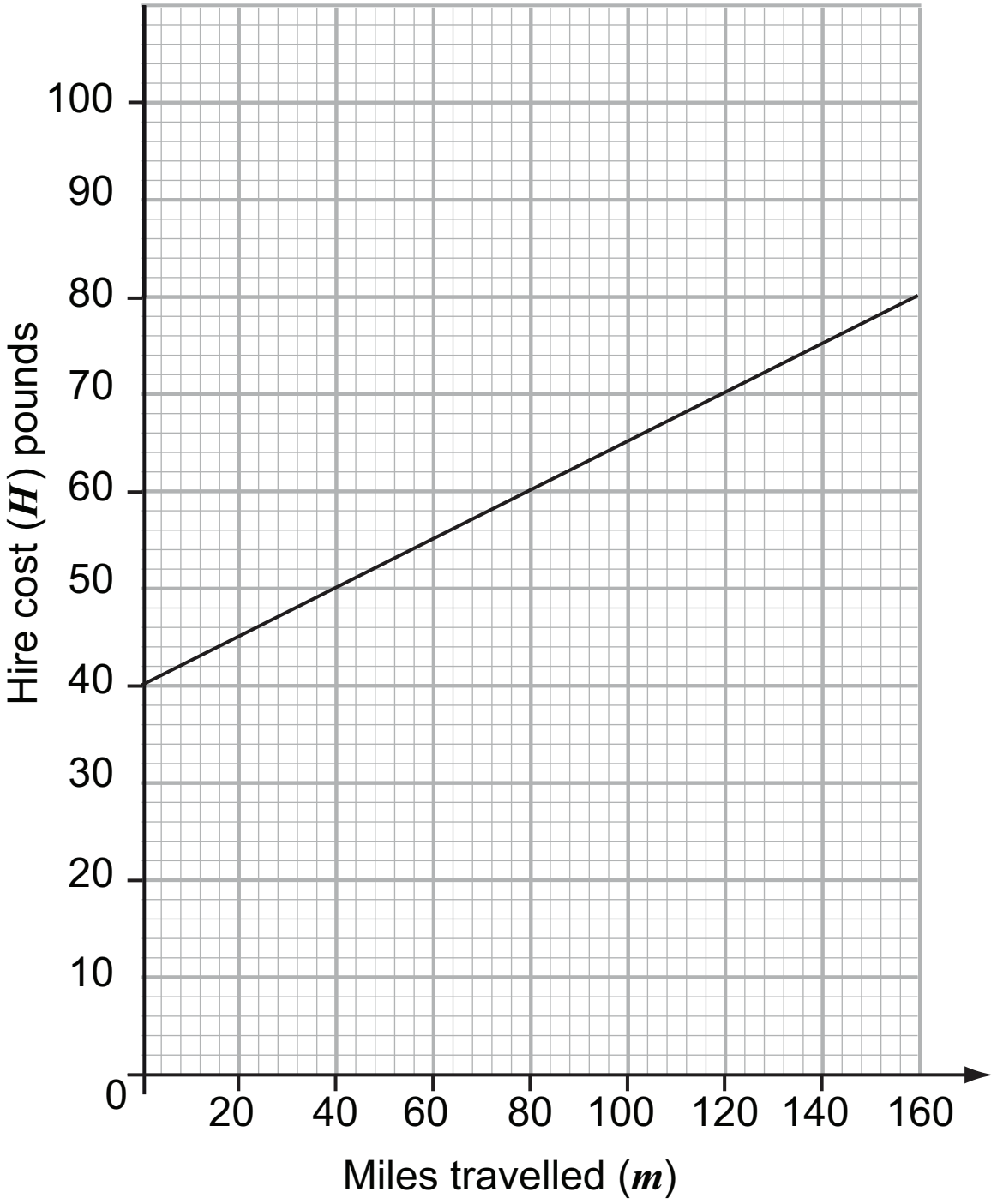
**6** Airport Autos is a car hire company.
The graph shows how the hire cost is calculated.




**(a)** Martha hired a car. The hire cost on return was **£**52
Use the graph to find how many miles Martha travelled.
[1 mark]

Answer _____ miles

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The hire cost ($H$) is made up of a fixed charge plus a charge for the number of miles travelled ($m$).

**(b) (i)** How much is the fixed charge? [1 mark]

Answer £ _____

**(ii)** How much is the charge per mile? [2 marks]

Answer _____

**(iii)** Hence write down a formula for the hire cost $H$ in terms of the number of miles travelled $m$. [2 marks]

Answer _____

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**7** **(a)** Write 3.55 correct to 1 decimal place. [1 mark]

Answer _____

**(b)** Write a digit in each box below so that the number when rounded to 2 decimal places is 4.70 [1 mark]

**(c)** Write down a whole number with no zeros which would give 5600 when rounded to 2 significant figures.
[1 mark]

Answer _____

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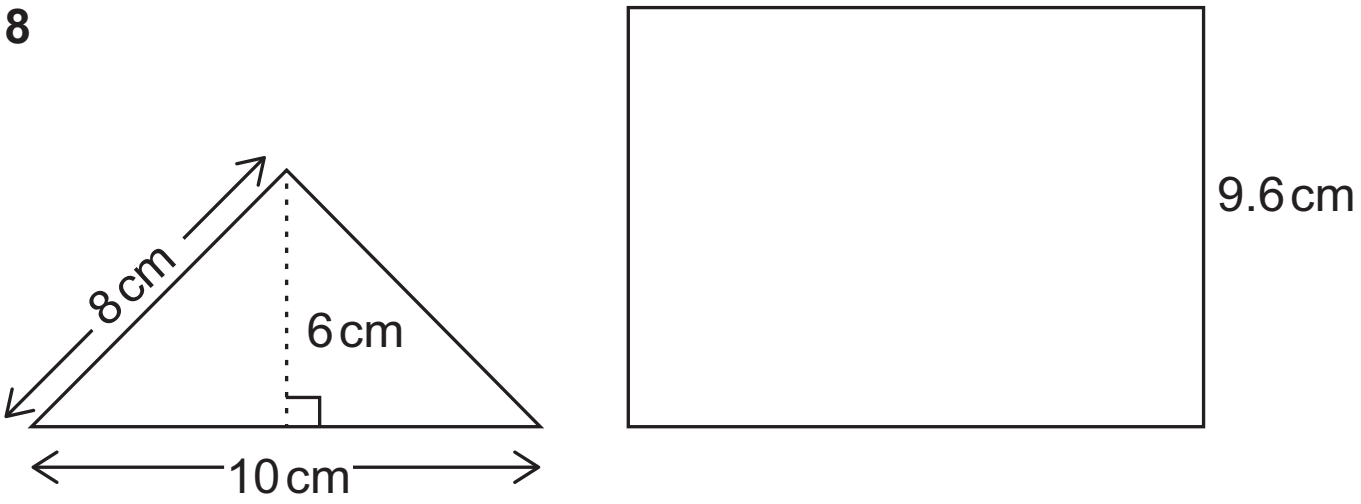
**8**




These diagrams are not drawn to scale.
The area of the rectangle is four times the area of the triangle.
Calculate the length of the rectangle. [4 marks]

Answer _____ **cm**

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**9** Bobby the builder has nails of five different lengths in a jar.

The probability of a nail being a certain length is given in the table.

| Length (mm) | 20 | 24 | 30 | 36 | 44 |
|---|---|---|---|---|---|
| Probability | 0.15 | | 0.2 | 0.25 | 0.35 |

**(a)** What is the probability of a nail being 24 mm long? [2 marks]

Answer _____

There are 60 nails in the jar.

**(b)** How many nails are longer than 30 mm? [3 marks]

Answer _____

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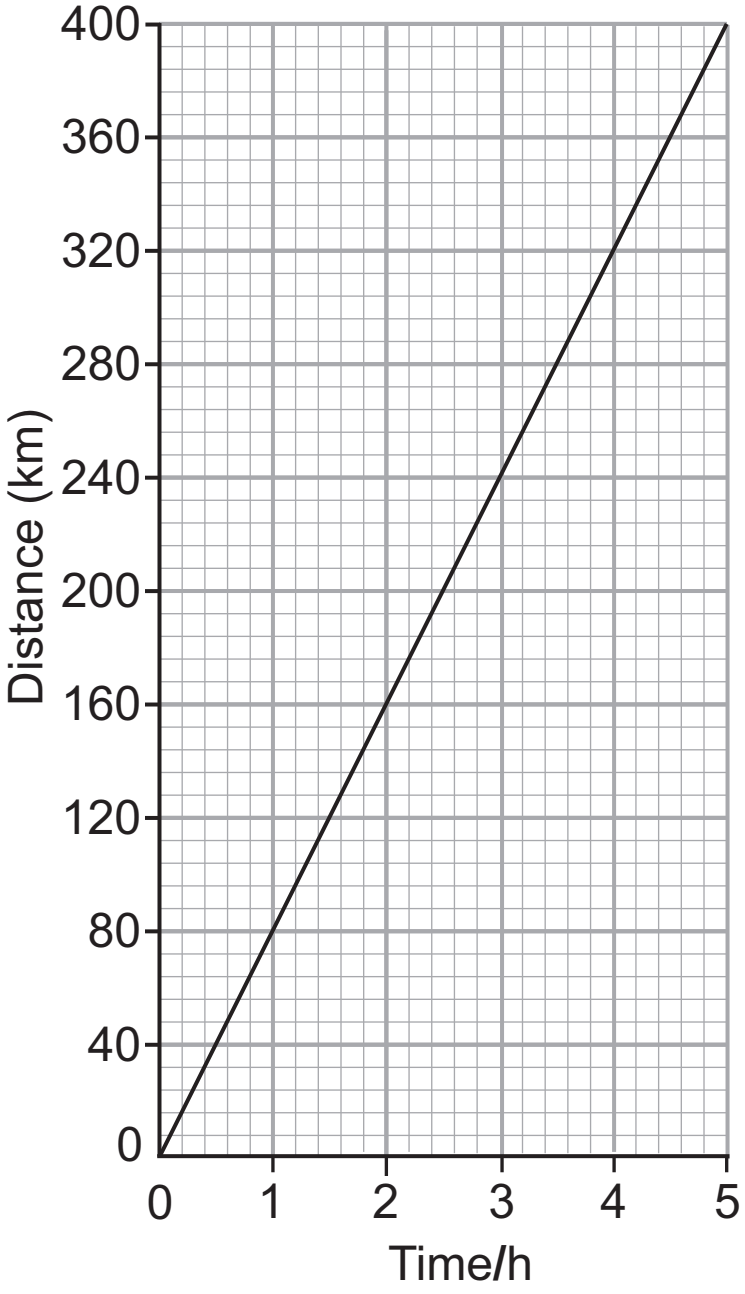
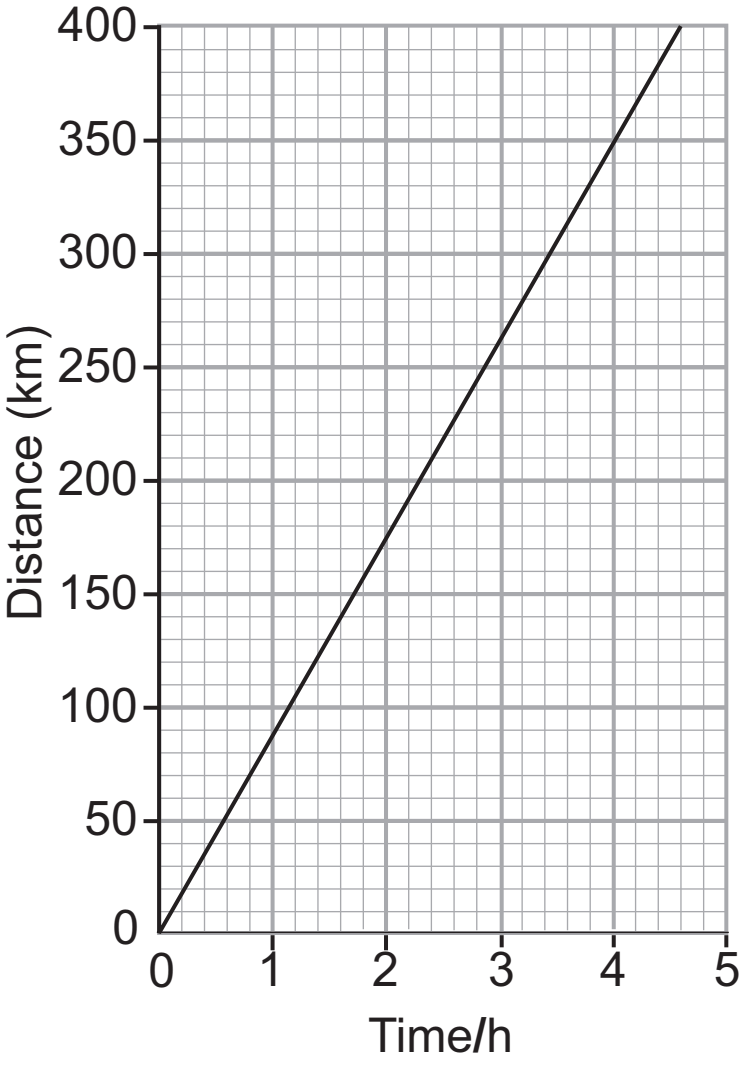
**Quality of written communication will be assessed in this question**

**10**

**Train A**




**Train B**



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The graphs opposite show how two trains complete a 400 km journey.

Which of the trains **A** or **B** has the greater average speed?
[3 marks]

Explain your answer clearly.

Train _____ because _____

_____

_____

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**11** Solve $4n + 3 > 28$ [2 marks]

Answer _____

**12**

| **Fruit** | | **Vegetables** | |
|---|---|---|---|
| Apple | 45**p** | Carrots | 35**p** per 100 g |
| Orange | 30**p** | Peas | 75**p** per 100 g |
| Banana | 25**p** | Beans | 40**p** per 100 g |

A portion is a single piece of fruit or 100 g of vegetables.

Fiona eats a total of 5 portions of fruit and vegetables each day.
Fiona has a maximum of £12 a week to spend on fruit and vegetables.
She buys at least two different types of fruit and at least two different types of vegetables.

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Show **one** way of buying the fruit and vegetables so that she has enough for a week, using the prices above.
[5 marks]

**Show all your working clearly.**

Answer _____

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| For Examiner's use only | |
|---|---|
| Question Number | Marks |
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| Total Marks | |

Examiner Number

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