Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
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4 – 5	
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24 – 25	
26	
TOTAL	

AQA

General Certificate of Secondary Education
Foundation Tier
November 2014

Mathematics (Linear) 4365/1F

Paper 1

F

Wednesday 5 November 2014 9.00 am to 10.15 am

For this paper you must have:
- mathematical instruments.

You must **not** use a calculator

Time allowed
- 1 hour 15 minutes

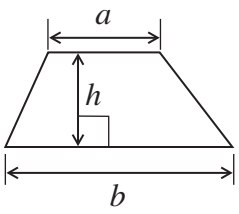
Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 70.
- The quality of your written communication is specifically assessed in Questions 13, 14 and 18. These questions are indicated with an asterisk (*).
- You may ask for more answer paper, tracing paper and graph paper. These must be tagged securely to this answer book.

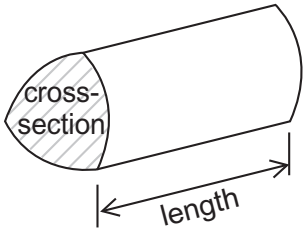
Advice
- In all calculations, show clearly how you work out your answer.

Formulae Sheet: Foundation Tier

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



Volume of prism = area of cross section × length



Answer **all** questions in the spaces provided.

1 (a) Circle the multiple of 9

[1 mark]

6 12 13 16 20 27

1 (b) Circle the factor of 40

[1 mark]

6 12 13 16 20 27

1 (c) Circle the square number.

[1 mark]

6 12 13 16 20 27

1 (d) Circle the prime number.

[1 mark]

6 12 13 16 20 27

Turn over for the next question

4

2 30 people gave their favourite flavour of ice-cream.

Complete the tally chart and pictogram.
Remember to complete the key for the pictogram.

[4 marks]

Tally chart to show favourite flavour of ice-cream

Flavour	Tally	Frequency
Vanilla	𝍸 𝍸	10
Chocolate	𝍸 |||	8
Strawberry	𝍸 ||	
Mint Choc Chip		5
	Total	30

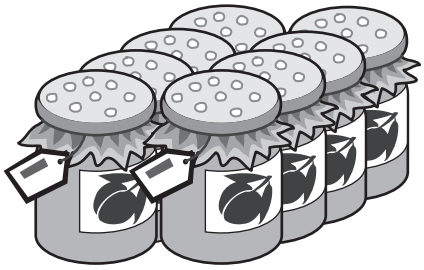
Pictogram to show favourite flavour of ice-cream

Key:  = ... people

Vanilla	
Chocolate	
Strawberry	
Mint Choc Chip	

Plum jam
Recipe for 8 jars

Caster Sugar	1.8 kg
Plums	1.2 kg
Water	160 ml
Lemon Juice	100 ml



3 (a) Jayne wants to make **4 jars** of jam.

How many **grams** of plums does she need?

[1 mark]

Answer ..... grams

3 (b) Jayne has 860 grams of caster sugar.

How much **more** caster sugar will she need to make **4 jars** of jam?
State the units of your answer.

[2 marks]

.....

Answer .....

7

4 There are two boxes, box A and box B.
Altogether, there are 30 oranges in the boxes.

7 oranges are moved from box A to box B.
The number of oranges in each box is now the same.

How many oranges were in box A at the start?

[2 marks]

.....

.....

Answer .....

5 Put numbers in the boxes to make the calculations correct.

5 (a)

[1 mark]

$$27 + \square = 60$$

5 (b)

[1 mark]

$$6 \times \square = 96$$

5 (c)

[1 mark]

$$\square \div 9 = 15$$

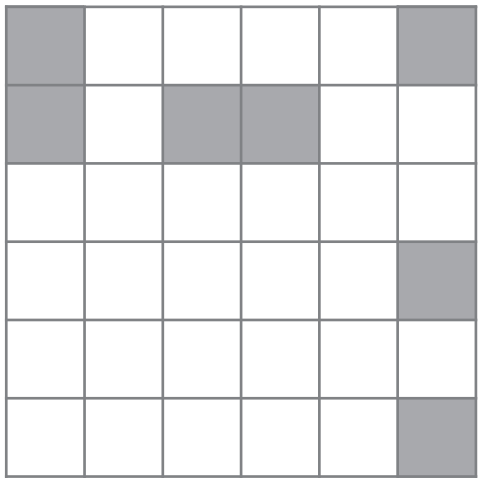
Turn over for the next question

5

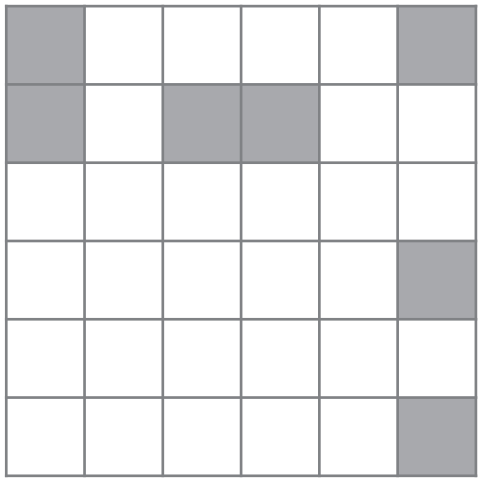
6 Shade 3 squares so this pattern has exactly **one** line of symmetry.

[2 marks]

Use this grid for practice.



Use this grid for your answer.



7 (a) Nick plays 8 games of chess.
He wins 6 games.

What fraction of the games did he win?
Give your answer in its simplest form.

[1 mark]

.....

.....

Answer .....

7 (b) Nick loses the 9th game.
He wins the 10th game.
He says,

"I have won more than 75% of all the games I have played."

Is he correct?
Tick a box.

☐ Yes ☐ No

Give a reason for your answer.

[2 marks]

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5

8 278 students are going on a trip.
At least one teacher must go with every 15 students.

Work out the smallest number of teachers who must go.

[3 marks]

.....

.....

.....

.....

Answer .....

9 Mary buys four pencils.
Each pencil costs 45p

She pays with a £2 coin.
She gets exactly **five** coins in her change.

What are the five coins?

[3 marks]

.....

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.....

.....

Answer ..... , ... , ... , ... , ...

Turn over for the next question

6

10 There are 10 balls in a bag.
They are red or blue or yellow.

There are twice as many blue balls as red balls.
There are more red balls than yellow balls.

A ball is taken at random from the bag.

Fill in the table to show the **probability** of taking each colour.

[3 marks]

.....

.....

.....

.....

Colour	Red	Blue	Yellow
Probability			

11 (a) Write $2\frac{5}{7}$ as an improper fraction.

[1 mark]

Answer .....

11 (b) Circle the fraction that is equivalent to $\frac{2}{3}$

[1 mark]

$\frac{4}{9}$ $\frac{7}{8}$ $\frac{15}{20}$ $\frac{16}{24}$

11 (c) Put the numbers 2, 4, 5 and 9 in the boxes to make the fraction equal to the decimal.

[1 mark]

$$\frac{\square}{\square} = \square \cdot \square$$

Turn over for the next question

6

12 (a) Solve $6x = 54$

[1 mark]

.....

$x =$ .....

12 (b) Solve $3y + 15 = 9$

[2 marks]

.....

.....

$y =$ .....

12 (c) Solve $4w + 2 = 2w + 7$

[3 marks]

.....

.....

.....

.....

$w =$ .....

***13** Here is a conversion graph.

[3 marks]

Shaz has 150 cm of material.
She needs 75 inches of material to make a skirt.

Does she have enough material?
You **must** show your working.

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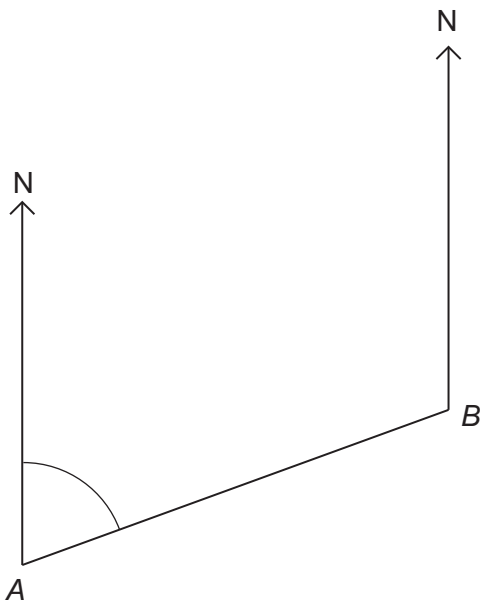
9

***14 (a)**

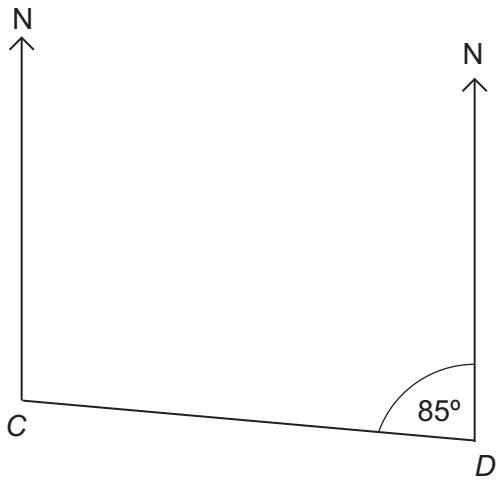


Measure and write down the **three-figure** bearing of *B* from *A*.

[1 mark]

Answer ..... °

14 (b)



Work out the **three-figure** bearing of *D* from *C*.

[1 mark]

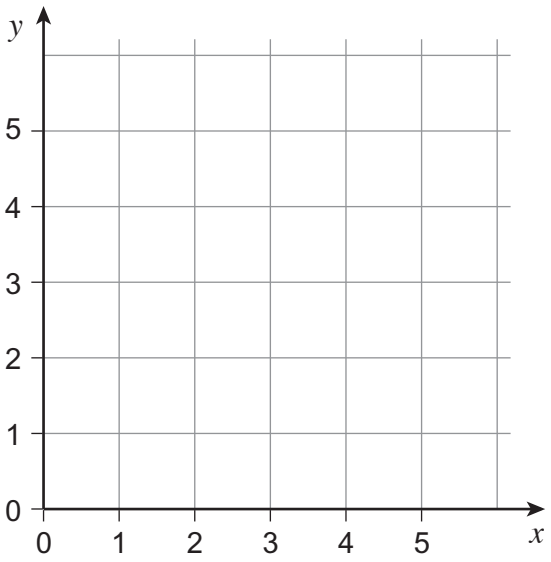
.....

.....

Answer ..... °

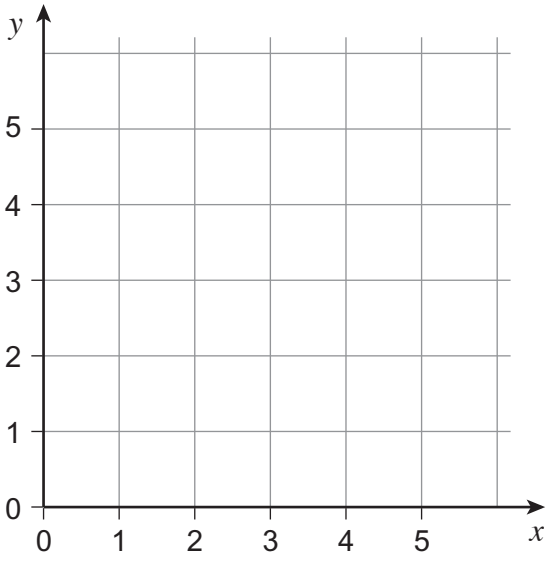
15 (a) Draw the line $x = 2$ on the grid.

[1 mark]



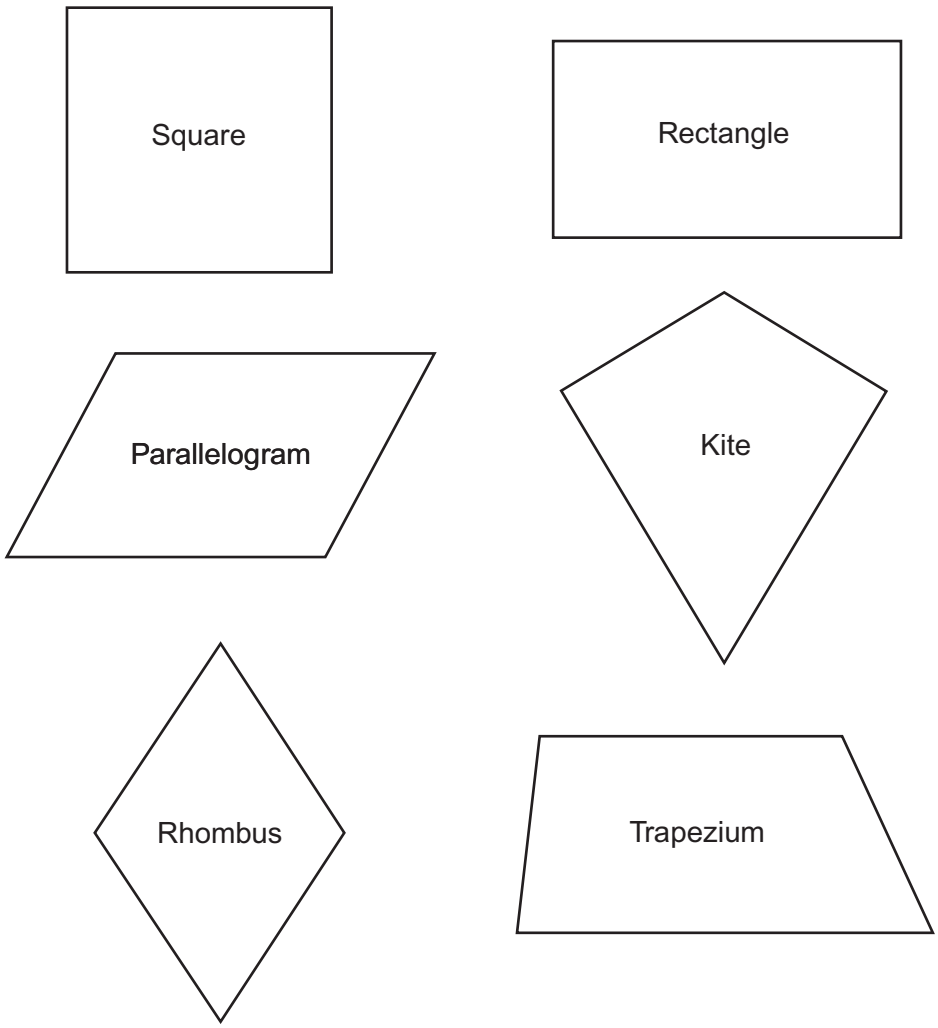
15 (b) Draw the line $y = x$ on the grid below.

[1 mark]



4

16 Here are six quadrilaterals.



16 (a) Write down the names of the **three** quadrilaterals that have diagonals crossing at right-angles.

[2 marks]

Answer .....

and .....

and .....

16 (b) Three quadrilaterals are

Square Rectangle Parallelogram

The parallelogram could be the odd one out.
Give a reason why.

[1 mark]

.....

.....

.....

16 (c) Three quadrilaterals are

Rectangle Parallelogram Rhombus

Tick the **one** property that these three quadrilaterals have in common.

[1 mark]

All four sides the same length ☐

All four angles equal ☐

Diagonals bisect each other ☐

Two lines of symmetry ☐

4

17 Anna wants to know the colours of cars in the school car park.
Brian wants to find out what students think about school dinners.
Carl wants to test people's reaction time.

Here are four data collection methods.

1 Questionnaire

2 Controlled experiment

3 Observation

4 Data logging

Choose the method each person should use.

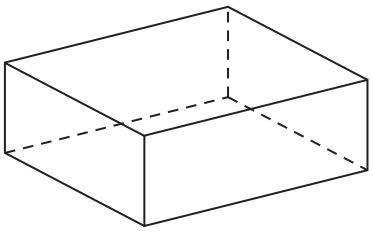
[2 marks]

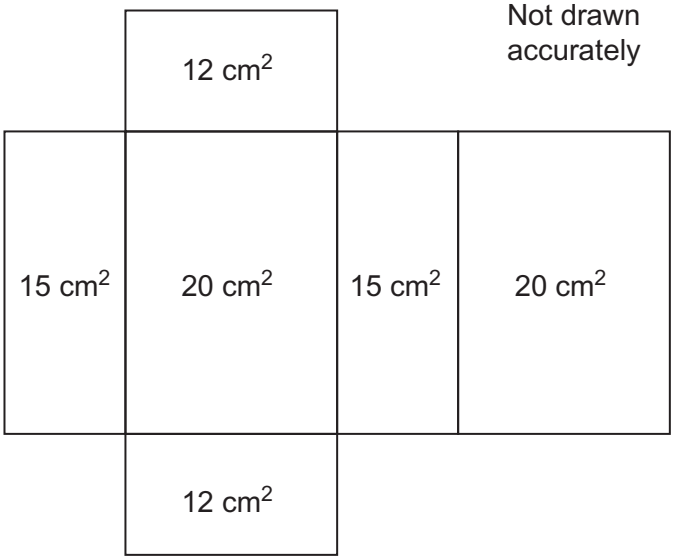
Anna .....

Brian .....

Carl .....

***18** Here is the net of a cuboid.
The net shows the area of each face.





Work out the **volume** of the cuboid.

[4 marks]

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Answer ..... cm^3

6

19 (a) The manager of a leisure centre uses this question in a survey.

How much time do you spend taking exercise?

Never	0 – 1 hours	1 – 2 hours	3 – 4 hours
☐	☐	☐	☐

Write down **two** things that are wrong with this question.

[2 marks]

1 .....

.....

.....

2 .....

.....

.....

19 (b) Complete the response section for this question.

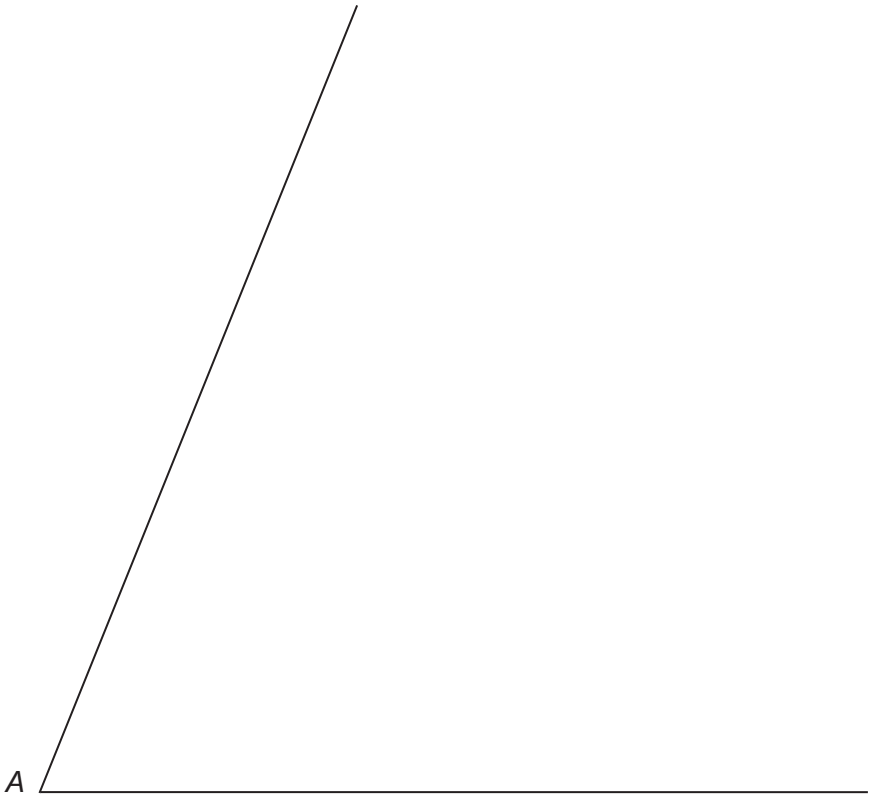
[1 mark]

How many days in a week would you use the leisure centre?

20 You will need a ruler and compasses to answer this question.

Construct the angle bisector of angle *A*.

[2 marks]



5

21 The table shows the length of the forearm, f, measured in cm, and the height, h, measured in cm, for 10 people.

Person	Length of forearm, f (cm)	Height, h (cm)
A	11	108
B	25	160
C	18	140
D	28	180
E	15	120
F	21	140
G	17	118
H	26	164
I	13	100
J	24	150

A scatter diagram of the data is shown opposite.

21 (a) Another person has a height of 145 cm

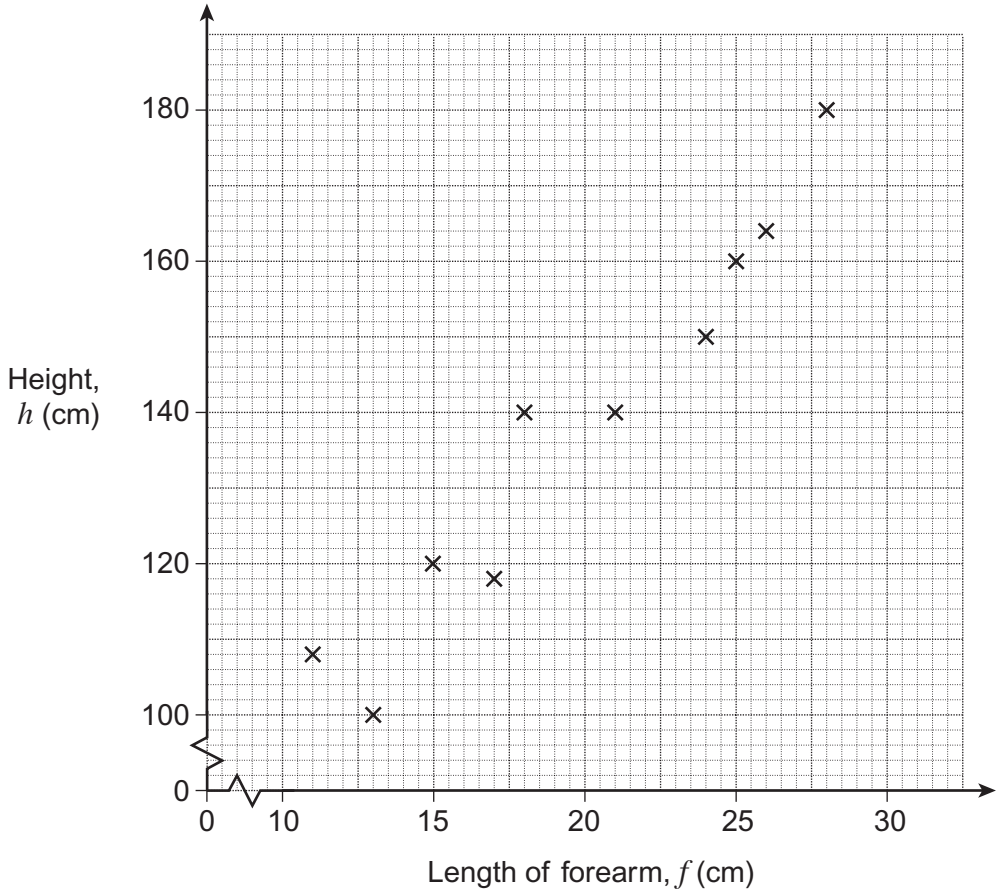
Use the scatter diagram to estimate the length of their forearm.
Show clearly how you found your estimate.

[2 marks]

.....

.....

Answer ..... cm



21 (b) An approximate formula connecting h and f is $h = 4 \times f + 60$

Choose a person from the table and test the formula.

[2 marks]

Person chosen .....

Does the formula work **exactly**?
Tick a box.

☐ Yes ☐ No

Show how you worked out your answer.

.....

.....

.....

4

22 (a) Three electric cars are tested by driving them around a track until the battery runs out. The table shows some information about their performance.

Car	Total time travelled (hours)	Average speed (km/h)	Total distance travelled (km)
A	4	35	
B		40	180
C	3		150

Complete the table.

[3 marks]

22 (b) Two cars are driven around a 10 kilometre track.
Both cars leave from the start line at the same time.

Car X travels at exactly 40 km/h
Car Y travels at exactly 30 km/h

How many minutes will it be before they pass the start line together again?

[2 marks]

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Answer ..... minutes

END OF QUESTIONS

5

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