

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

General Certificate of Secondary Education

MATHEMATICS SYLLABUS A

1962/2

PAPER 2 (Foundation Tier)

Monday **12 JUNE 2006** Morning 1 hour 30 minutes

Candidates answer on the question paper.

Additional materials:

- Electronic Calculator
- Geometrical instruments
- Tracing paper (optional)

Candidate Name	Centre Number	Candidate Number											
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TIME 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

- Write your name in the space above.
- Write your Centre number and candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers, in blue or black ink, in the spaces provided on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Show your working. Marks may be given for working that shows that you know how to solve the problem even if you get the answer wrong.
- You are expected to use an electronic calculator for this paper.

INFORMATION FOR CANDIDATES

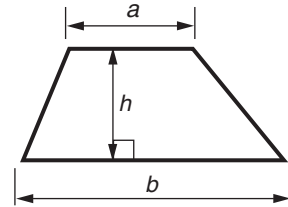
- The number of marks is given in brackets [] at the end of each question or part question.
- Unless otherwise instructed in the question, take π to be 3.142 or use the π button on your calculator.

FOR EXAMINER'S USE

This question paper consists of 21 printed pages and 3 blank pages.

Formula Sheet: Foundation Tier

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



1 (a) Write 6 000 000 in words.

(a) _____ [1]

(b) Write down the number seven thousand and forty three in figures.

(b) _____ [1]

(c) Use numbers from this list to complete the sentences.

5 7 10 15 25 29

_____ is an even number.

_____ is a square number.

_____ is a multiple of 3.

_____ is a factor of 21. [4]

(d) Write the number 5638

(i) to the nearest 10,

(d)(i) _____ [1]

(ii) to the nearest 100.

(ii) _____ [1]

2 Complete these labels using suitable words.

This is the _____

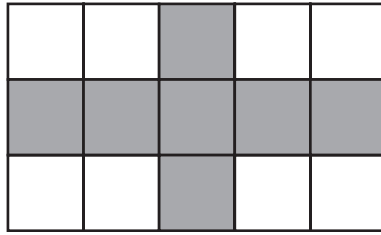
This line is a _____

This point is the _____

The line from A to B is a _____

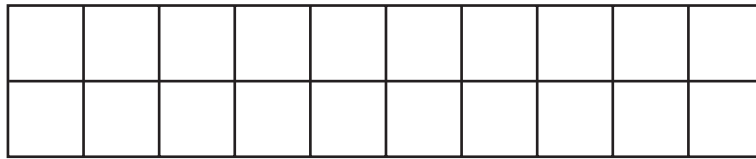
[4]

- 3 (a) What fraction of this diagram is shaded?



(a) _____ [1]

- (b) Shade 30% of this diagram.



[1]

- (c) (i) Put a ring round the fractions which are **equivalent** to $\frac{1}{5}$.

$$\frac{2}{10} \quad \frac{2}{6} \quad \frac{11}{15} \quad \frac{4}{20} \quad \frac{12}{52}$$

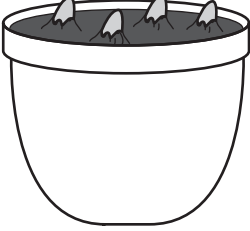
[2]

- (ii) Dan thinks that $\frac{50}{10}$ is equivalent to $\frac{1}{5}$. Explain how you know that he is wrong.

_____ [1]

- 4 (a) A gardening catalogue suggests this combination of plants for a patio pot.

PATIO SUGGESTION



Plant two daffodils for every iris.
Plant three more tulips than irises.

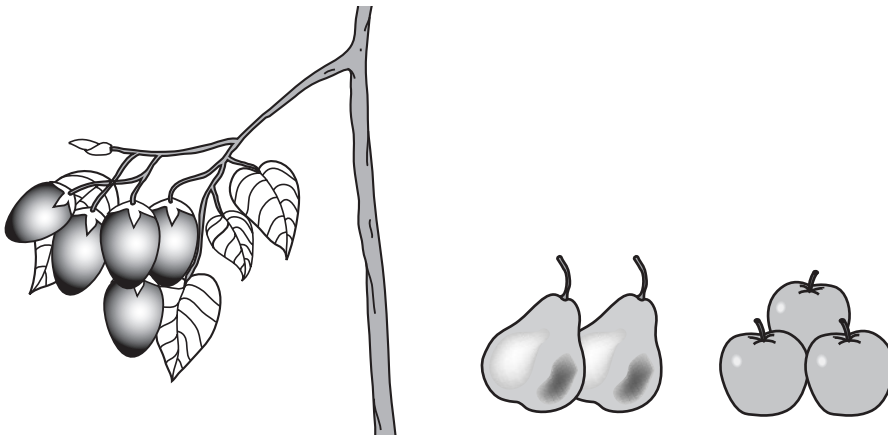
Charlie plants 4 irises.

How many daffodils and how many tulips should she plant?

.....

.....

(a) _____ daffodils and _____ tulips. [2]



- (b) In an orchard there are 50 fruit trees.

There are three times as many plum trees as pear trees. The rest are apple trees.

There are 7 pear trees.

How many plum trees and how many apple trees are there?

.....

.....

(b) _____ plum trees and _____ apple trees. [2]

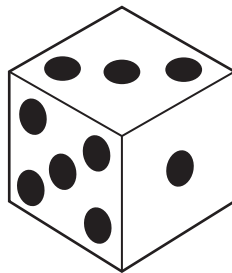
- 5 (a) 100 students are sitting a Summer GCSE examination in the Sports Hall.

Complete the following sentences using words from the list below.
You may need to use the same word more than once.

impossible unlikely likely certain

- (i) It is _____ that everyone in the Hall has the same first name.
 (ii) It is _____ that someone in the Hall has a birthday in March.
 (iii) It is _____ that the next day will be Christmas Day.
 (iv) It is _____ that someone in the Hall is 13 years old. [4]

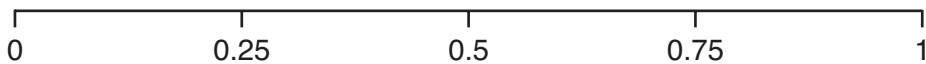
(b)



Jenny rolls a fair dice with faces numbered 1 to 6.

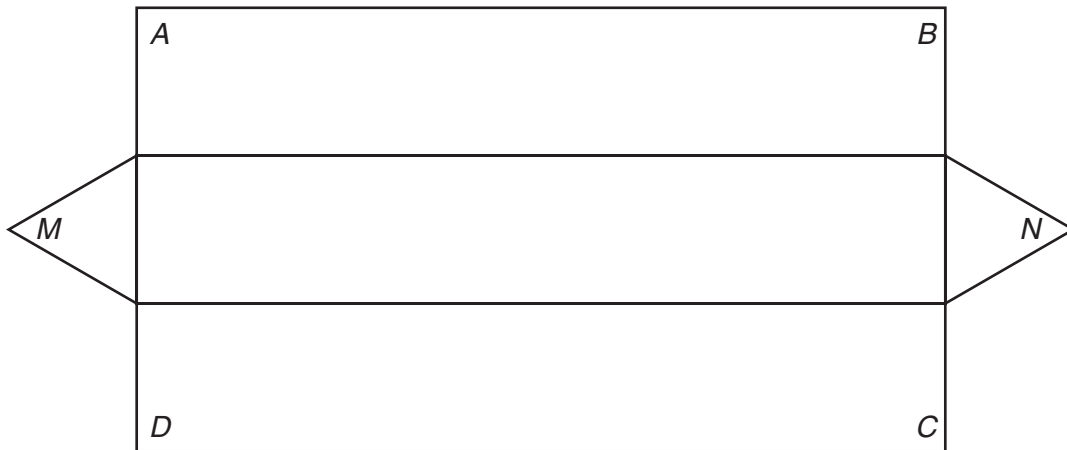
On the probability line below draw an arrow to show the following.

- (i) The probability that she rolls an odd number. Label this arrow X.
 (ii) The probability that she rolls a 7. Label this arrow Y.



[2]

- 6 The diagram shows the net of a 3-Dimensional shape.



- (a) Measure the length of the edge AB .

(a) _____ cm [1]

- (b) When the net is folded it makes a 3-D shape.

- (i) What is the name of the 3-D shape?

(b)(i) _____ [1]

- (ii) How far will M be from N ?

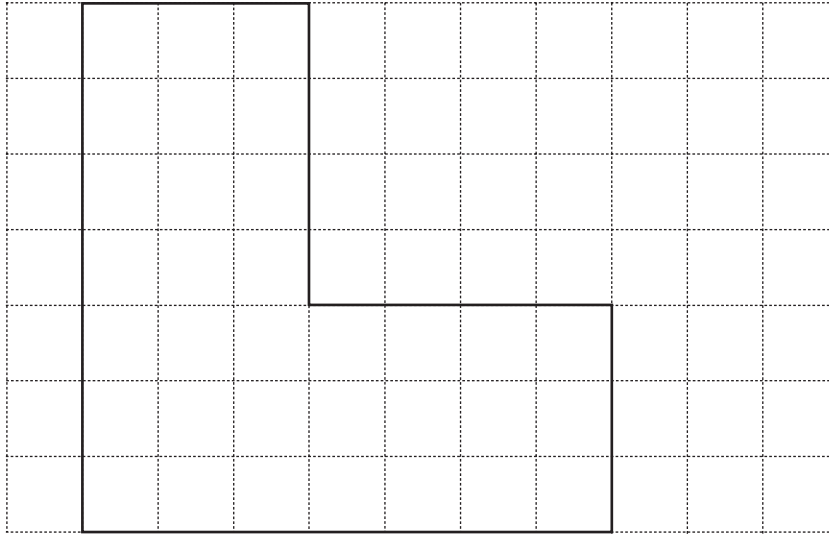
(ii) _____ cm [1]

- (iii) Which vertices will touch A ?

(iii) _____ [1]

7 This shape is drawn on a centimetre grid.

(a) Find its area.

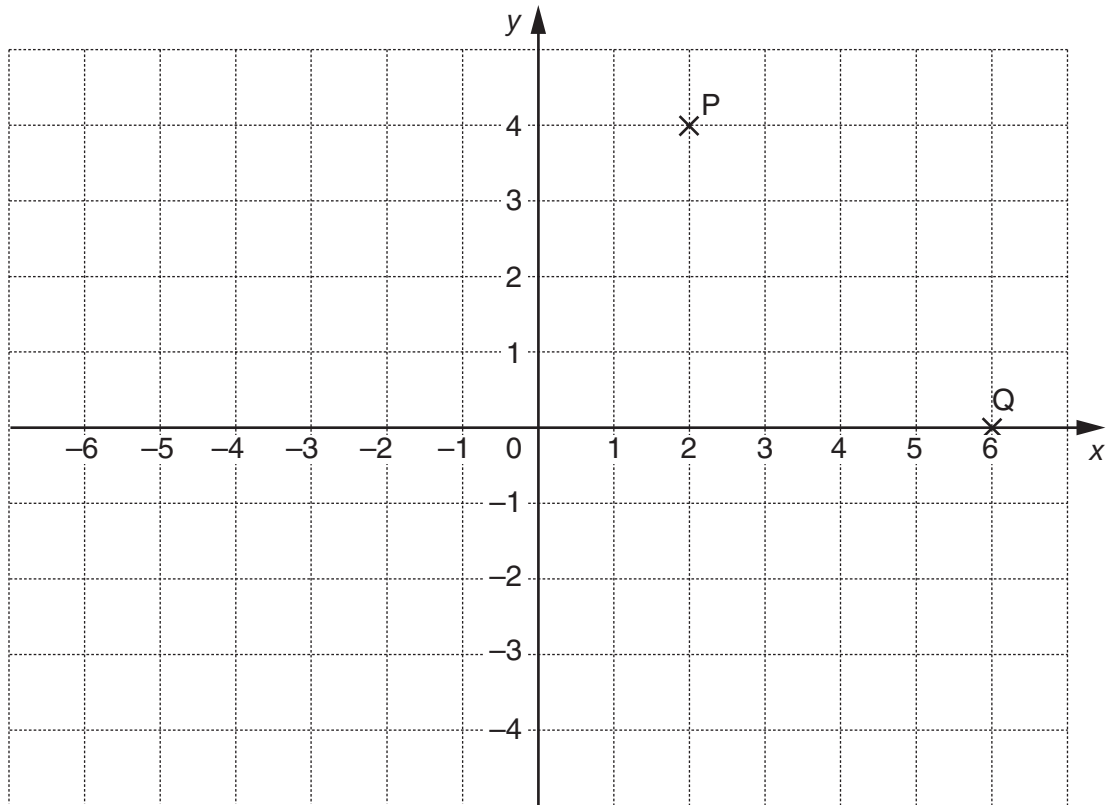


.....
(a) _____ cm² [2]

(b) Draw a line of symmetry on this shape.

[1]

8



(a) Write down the coordinates of the points P and Q.

P (_____ , _____) [1]

Q (_____ , _____) [1]

(b) Plot and label the points R (-3, 2) and S (0, -4).

[2]

9 An electricity company charges the following prices.

- ❖ a fixed charge of £3.15 per month
- plus**
- ❖ 6.5p for each unit of electricity used.

The meter records the total units used so far.

On 1st June the meter reading was 8415.

On 1st May the meter reading was 7659.

Work out the **total** cost.

.....

.....

.....

.....

£ _____ [4]

10 (a) Use your calculator to work these out.

(i) 3.3^2

(a)(i) _____ [1]

(ii) $\sqrt{6.25}$

(ii) _____ [1]

(iii) $\frac{3}{1.89}$

Give your answer to 1 decimal place.

(iii) _____ [2]

(iv) $\frac{3}{7}$ of 154

(iv) _____ [2]

(b) Here are the first five terms of a sequence.

2 4 8 16 32

(i) Work out the next term.

.....

(b)(i) _____ [1]

(ii) Explain the rule for finding the next term in the sequence.

_____ [1]

(iii) Another sequence begins with these terms.

5 6 8 11 15

Work out the next term.

.....

(iii) _____ [1]



Farrah was looking at details about cruise ships.

(a) The table shows how many passengers each ship carries.

Ship	A	B	C	D	E	F
Passengers	885	850	800	725	540	1150

What is the mean number of passengers carried by these cruise ships?

.....

.....

.....

(a) _____ [3]

(b) Another cruise ship carries a total of 3200 people.
 Some are crew and the rest are passengers.
 The ratio of crew to passengers is 1 : 3.
 How many passengers does this cruise ship carry?

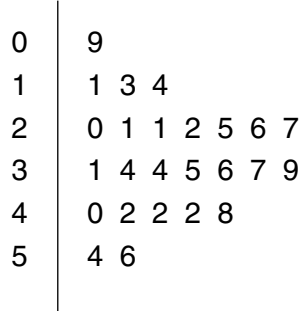
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.....

(b) _____ [2]

12 The weights of 25 dogs are shown in the stem and leaf diagram below.



5 | 4 represents 5.4 kg

(a) Write down the weight of the heaviest dog.

(a) _____ kg [1]

(b) Work out the range.

.....

(b) _____ kg [1]

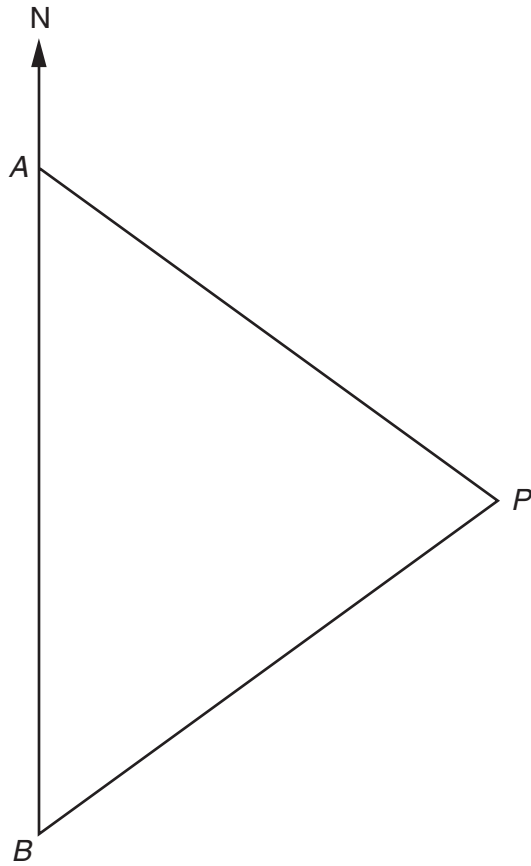
(c) Find the median.

.....

.....

(c) _____ kg [1]

- 13** The diagram below shows the positions of Anna's house (*A*), Bryn's house (*B*) and a post-box (*P*).
Anna's house is due North of Bryn's house.
The scale of the diagram is 1 cm to 50 m.



- (a)** Find the distance, in metres, between Bryn's house and the post-box.

.....
.....

(a) _____ m [2]

- (b)** Measure the bearing of the post-box from Anna's house.

(b) _____ ° [1]

- (c)** Clare's house is 200 m due East of Anna's house.

Mark a point C on the diagram to show the position of Clare's house. [2]

14 (a)



Hannah's height is 56% of the height of the door. The height of the door is 1.95 m.

Calculate Hannah's height.

.....
.....

(a) _____ m [2]

(b) Calculate the value of this expression.

$$\frac{7}{(0.5)^2}$$

.....

(b) _____ [2]

15 (a) Solve.

$$2x + 5 = 12$$

.....

(a) _____ [2]

(b) Simplify completely.

$$7x - 3y + 9x - 2y$$

.....

(b) _____ [2]

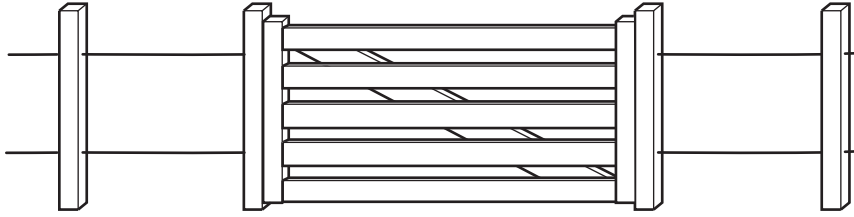
(c) Multiply out.

$$5(x + 3)$$

.....

(c) _____ [1]

16



Farmer Giles is putting a new gate and fence on one side of a field.

(a) Work out the three missing values in this bill.

.....

.....

.....

.....

FENCE MATERIALS		
18 posts	@ £2.63 per post	£.....
..... m of wire	@ £1.25 per metre	£.....
Total cost		£ 116.09

[4]

(b) Farmer Giles can buy a wooden gate or a metal gate.
 A wooden gate costs £125 including VAT.
 A metal gate costs £114 plus VAT.
 The rate of VAT is 17.5 %.

How much cheaper is a wooden gate than a metal gate?

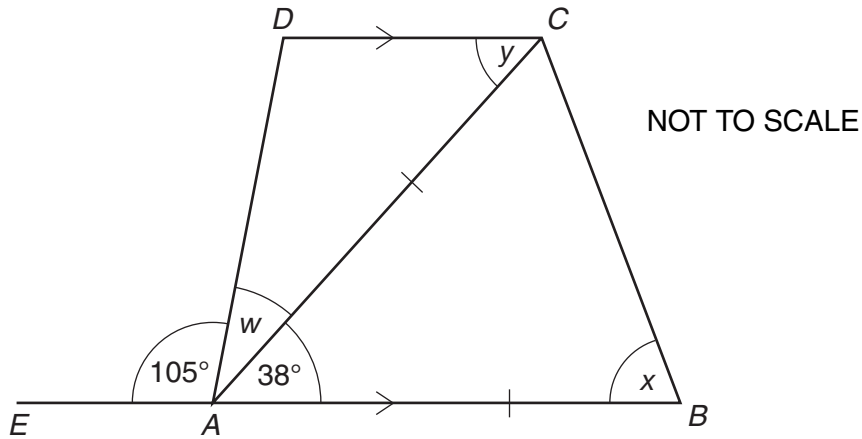
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.....

(b) £ _____ [3]

17



In the diagram, EAB is a straight line.

(a) Work out angle w . Give a reason for your answer.

.....

$w =$ _____ $^\circ$ because _____
 _____ [2]

(b) In the diagram, $AB = AC$.

Work out angle x .

.....

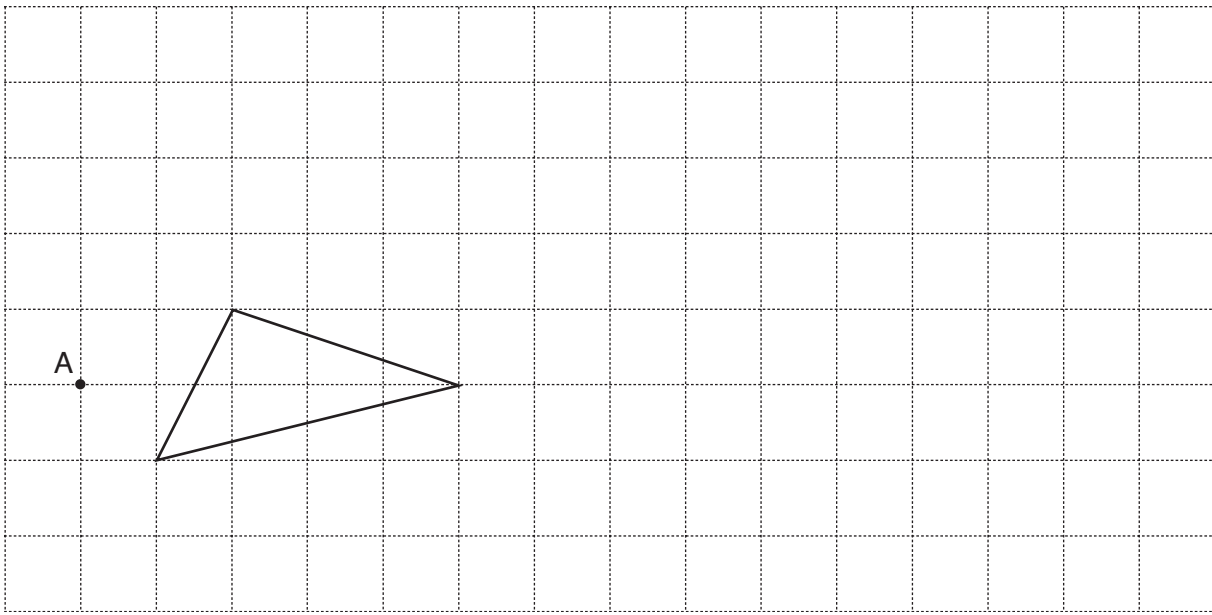
(b) $x =$ _____ $^\circ$ [2]

(c) In the diagram, EB is parallel to DC .
 Find angle y . Give a reason for your answer.

.....

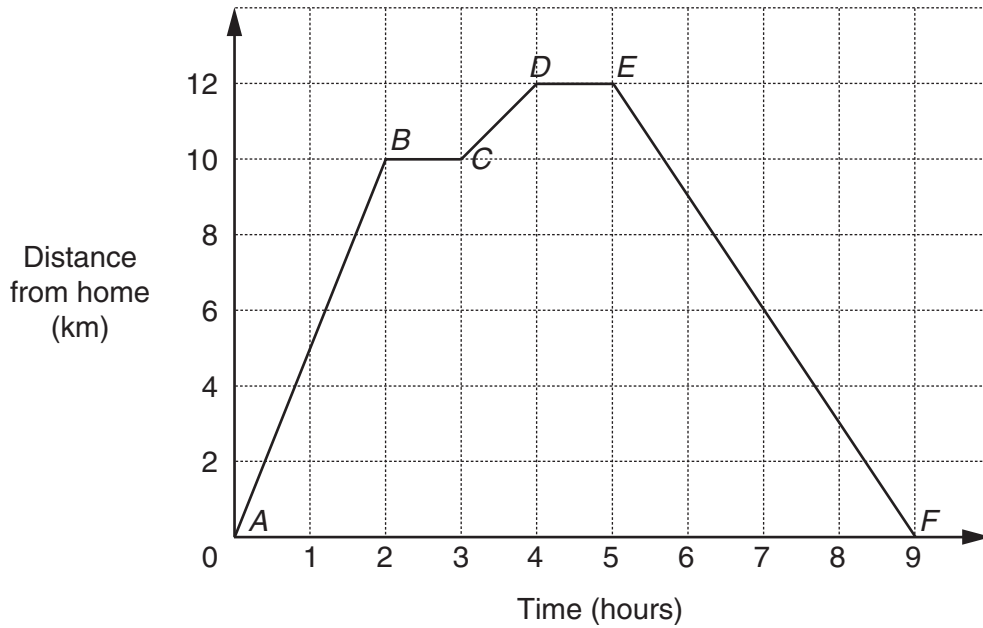
$y =$ _____ $^\circ$ because _____
 _____ [2]

18 On the grid, enlarge the triangle from centre A by scale factor 2.



[3]

- 19 (a) Mark went for a walk.
His walk is represented by the graph below.



- (i) Which section of the graph shows when he walked fastest?

(a)(i) _____ [1]

- (ii) What was his average speed for the first four hours?

.....

(ii) _____ km/h [2]

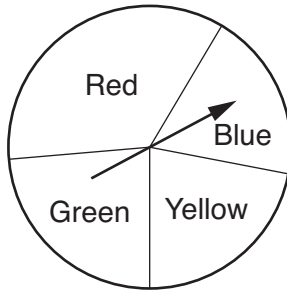
- (b) An aircraft travelled 3000 km in 2 hours 30 mins.

What was its average speed?

.....
.....
.....

(b) _____ km/h [2]

20



(a) A spinner has sections coloured red, green, yellow, and blue. The sections are not all the same size.

(i) Complete the probability table.

.....
.....

Colour	Red	Green	Yellow	Blue
Probability	0.4		0.25	0.15

[2]

(ii) The spinner is spun 100 times.

How many times would you expect it to land on yellow?

.....

(ii) _____ [1]

(b) The circular spinner has a radius 2.9 cm. Calculate the circumference of the spinner. Give your answer to two significant figures.

.....
.....
.....

(b) _____ cm [3]

