

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

For Examiner's Use

General Certificate of Secondary Education
June 2007



MATHEMATICS (SPECIFICATION A)
Foundation Tier
Paper 1 Non-Calculator

3301/1F
F

Monday 4 June 2007 1.30 pm to 3.00 pm

<p>For this paper you must have:</p> <ul style="list-style-type: none"> mathematical instruments. <p>You must not use a calculator.</p>	
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For Examiner's Use	
Pages	Mark
3	
4–5	
6–7	
8–9	
10–11	
12–13	
14–15	
16–17	
18	
TOTAL	
Examiner's Initials	

Time allowed: 1 hour 30 minutes

Instructions

- Use blue or black ink or ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- Answer the questions in the spaces provided.
- Do all rough work in this book.

Information

- The maximum mark for this paper is 100.
- The marks for questions are shown in brackets.
- You may ask for more answer paper, graph paper and tracing paper. This must be tagged securely to this answer book.

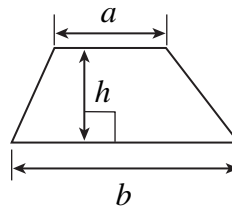
Advice

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

Formula Sheet: Foundation Tier

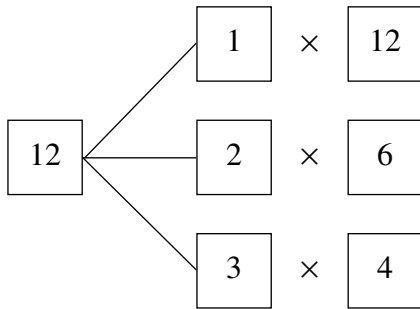
You may need to use the following formula:

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



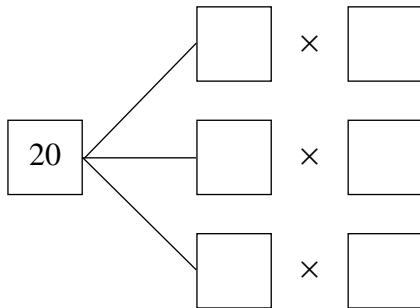
Answer **all** questions in the spaces provided.

1 Here is a diagram to find the factors of 12.



The factors of 12 are 1, 2, 3, 4, 6, 12

Complete the diagram below to find the factors of 20.



Answer The factors of 20 are (4 marks)

2 The table shows the number of candidates who sat a GCSE Mathematics examination.

Tier	Foundation	Intermediate	Higher
Number of candidates	30 338	65 306	29 581

(a) Which tier had the greatest number of candidates?

Answer (1 mark)

(b) Write 30 338 in words.

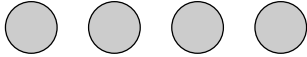
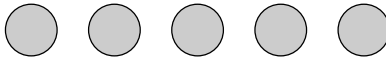


Answer
..... (1 mark)

(c) Write 29 581 to the nearest thousand.

.....
Answer (1 mark)

Turn over ►

- 3 The pictogram shows the average number of hours of sunshine per day in Tenerife for five months.

Month		Average hours per day
May		8
June		10
July		
August		12
September		9

- (a) How many hours of sunshine does the symbol  represent?

Answer hours (1 mark)

- (b) Fill in the average number of hours of sunshine per day for July. (1 mark)

- (c) Which month has the greatest average number of hours of sunshine?

Answer (1 mark)

- (d) Complete the pictogram for September. (1 mark)

- 4 Here is a number pattern.

$$1 + 3 = 4$$

$$1 + 3 + 5 = 9$$

$$1 + 3 + 5 + 7 = 16$$

$$\dots\dots\dots = \dots\dots\dots$$

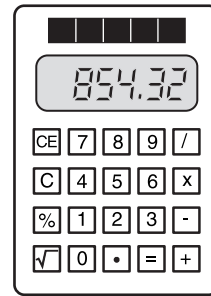
$$\dots\dots\dots = \dots\dots\dots$$

- (a) Write down the next two lines in the pattern. (4 marks)

- (b) What special name is given to the numbers 4, 9 and 16?

Answer (1 mark)

- 5 Pat works out the answer to 23.6×36.2 on a calculator. Her answer is shown on the calculator.



- (a) Round her answer to the nearest 10.

Answer (1 mark)

- (b) Round her answer to the nearest 100.

Answer (1 mark)

- (c) Round her answer to one decimal place.

.....

Answer (1 mark)

- 6 Which metric unit would you use to measure the following?

- (a) The length of a pencil

Answer (1 mark)

- (b) The amount of petrol in a car's tank

Answer (1 mark)

- (c) The area of a football pitch

Answer (1 mark)

- (d) The weight of a bus

Answer (1 mark)

7 Work out

(a) $23.4 + 7.3$

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

Answer (1 mark)

(b) $9.6 - 3.9$

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

Answer (1 mark)

(c) 24×6

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.....
.....

Answer (1 mark)

(d) $125 \div 5$

.....

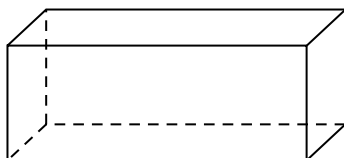
Answer (1 mark)

(e) 276×34

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.....
.....
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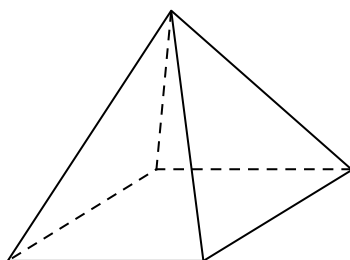
Answer (3 marks)

8 Here is a cuboid.



A cuboid has 6 faces, 8 vertices and 12 edges.

Here is a square-based pyramid.



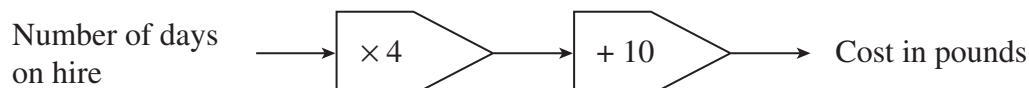
Write down the number of faces, vertices and edges for a square-based pyramid.

Answer (a) faces (1 mark)

(b) vertices (1 mark)

(c) edges (1 mark)

9 Here is a rule to work out the cost to hire a carpet cleaner.



(a) How much does it cost to hire the carpet cleaner for five days?

.....

Answer £ (2 marks)

(b) Cath hires a carpet cleaner and pays £38.

For how many days does she hire the carpet cleaner?

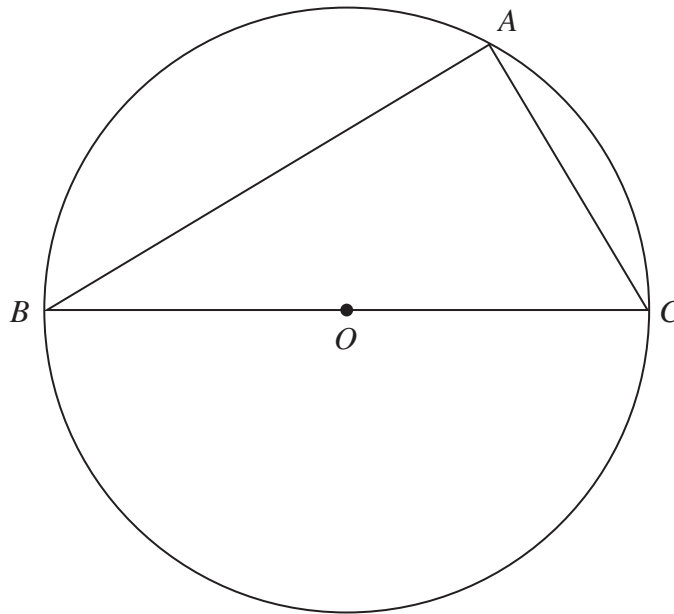
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.....

Answer days (2 marks)

Turn over ►

10 Triangle ABC is drawn inside a circle with centre O .



(a) Measure the length of the radius of the circle.

Answer cm (1 mark)

(b) Measure the size of angle BAC .

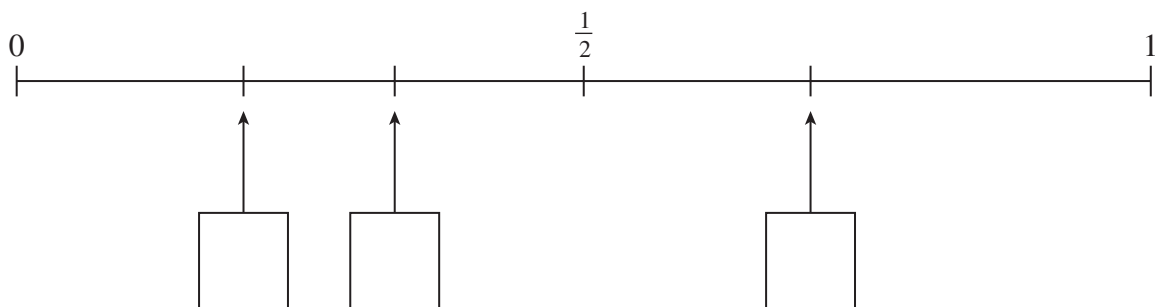
Answer degrees (1 mark)

(c) Mark point P on the circumference of the circle so that AP is a diameter. (2 marks)

11 Here are three fractions.

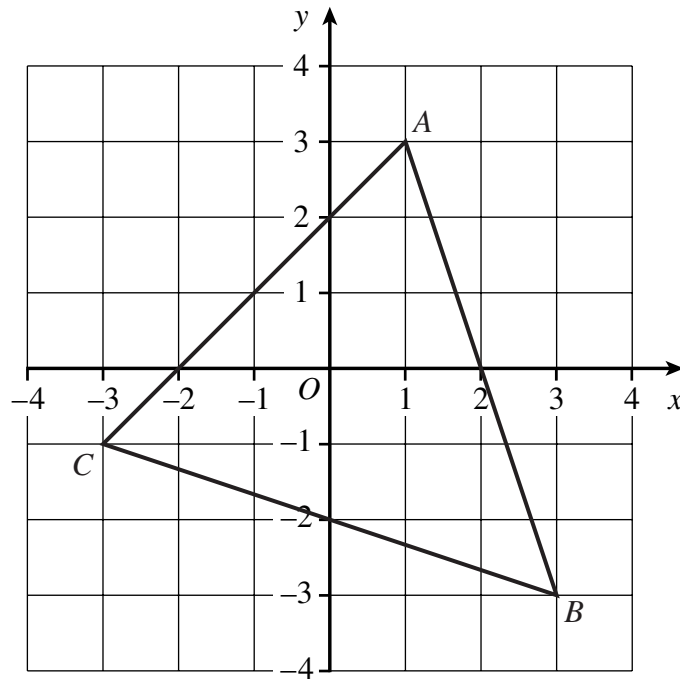
$$\frac{1}{3} \quad \frac{7}{10} \quad \frac{1}{5}$$

Write each fraction in the correct box on the number line below.



(2 marks)

12 Triangle ABC is drawn on a grid.



Write down the coordinates of A , B and C .

Answer A (..... ,)

B (..... ,)

C (..... ,) (3 marks)

13 Glynn says that $\sqrt{16 + 9}$ is the same as $\sqrt{16} + \sqrt{9}$

Show that Glynn is wrong.

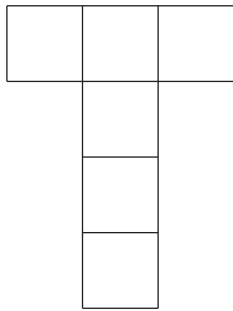
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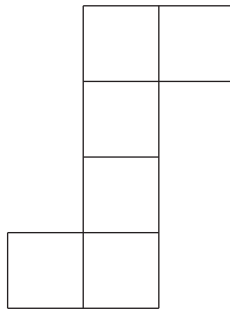
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(2 marks)

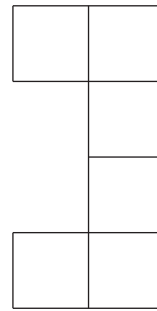
14 Which **three** of the following are nets of a cube?



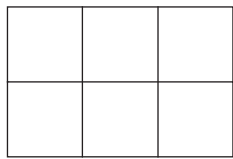
A



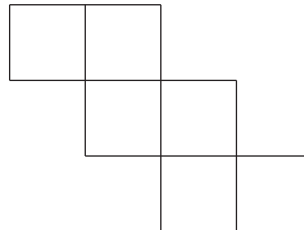
B



C



D



E

Answer (2 marks)

15 Jim records how many text messages he receives each day for ten days.

3 0 1 4 1 4 6 1 20 0

(a) Work out the median.

.....

Answer (2 marks)

(b) Work out the mean.

.....

Answer (2 marks)

(c) Which of these two averages better represents the data?
 Explain your answer.

.....

(1 mark)

16 Two sets of algebraic expressions are shown below.

Draw a line from each expression on the left to the equivalent expression on the right.
One line has already been drawn.

$2x + x$	$3x$
$3x - x$	$3x + 1$
$3x \times x$	x^3
$3(x + 1)$	$3x^2$
$x \times x \times x$	$2x$
	3
	$3x + 3$

(4 marks)

17 Howard has 400 marbles.
137 of the marbles are red.
128 of the marbles are white.
The rest of the marbles are blue.

(a) How many blue marbles does Howard have?

.....

.....

.....

.....

Answer (2 marks)

(b) Howard buys 20 more marbles.
He now has an equal number of each colour marble.

How many white marbles does Howard buy?

.....

.....

.....

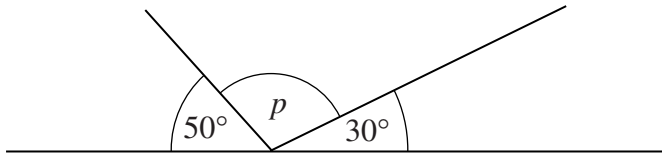
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Answer (3 marks)

Turn over ►

18 Work out the size of each missing angle in the diagrams below.

(a)

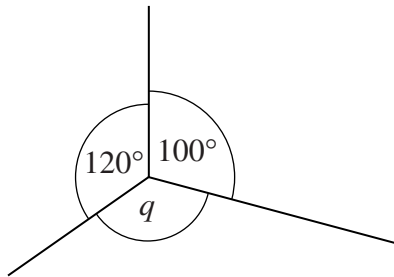


Not drawn accurately

.....

Answer $p =$ degrees (1 mark)

(b)



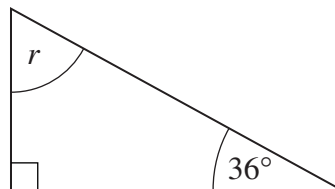
Not drawn accurately

.....

.....

Answer $q =$ degrees (2 marks)

(c)



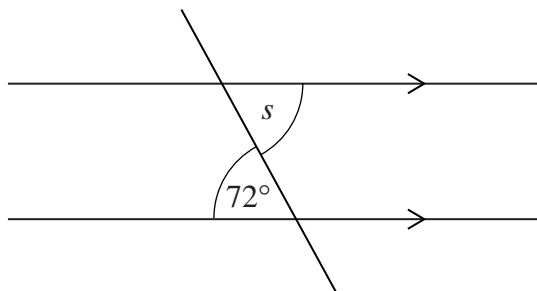
Not drawn accurately

.....

.....

Answer $r =$ degrees (2 marks)

(d)



Not drawn accurately

.....

Answer $s =$ degrees (1 mark)

19 Complete the following table.

$x = 8$	$3x = 24$
$y = \dots\dots$	$4y = 20$
$3z = 12$	$5z = \dots\dots\dots$

.....

(3 marks)

20 The table shows Ann's marks in two tests.

Test	Mark
1	60 out of 80
2	70 out of 100

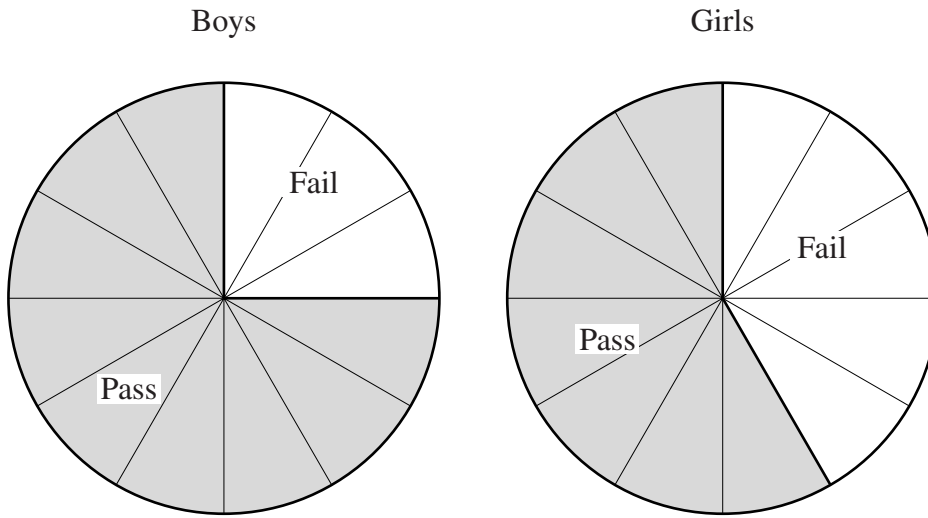
In which test did Ann do better?
 You **must** show your working.

.....

Answer (3 marks)

Turn over ►

21 The pie charts show the results of a cycling test.



(a) The number of boys who fail the test is 15.

How many boys pass the test?

.....

Answer (2 marks)

(b) The number of girls who take the test is the same as the number of boys who take the test.

This two-way table shows that 15 boys fail the test.

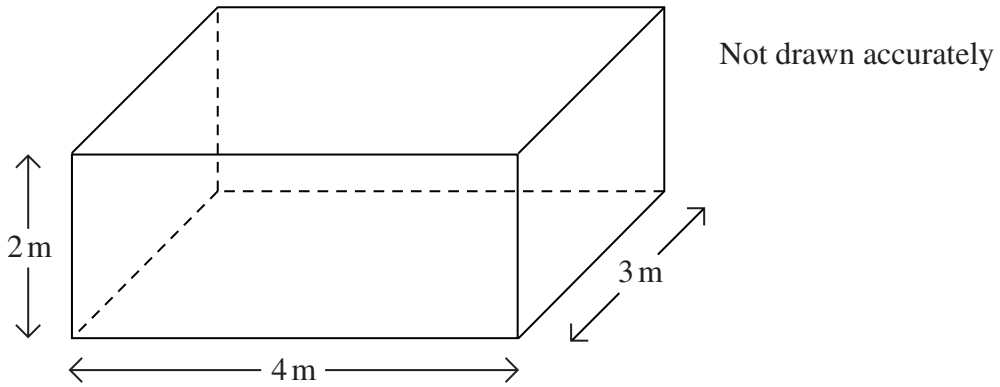
	Boys	Girls
Pass		
Fail	15	

Complete the two-way table.

.....

(2 marks)

22 The diagram shows a container in the shape of a cuboid.



- (a) Work out the volume of the container.
State the units of your answer.

.....

Answer (3 marks)

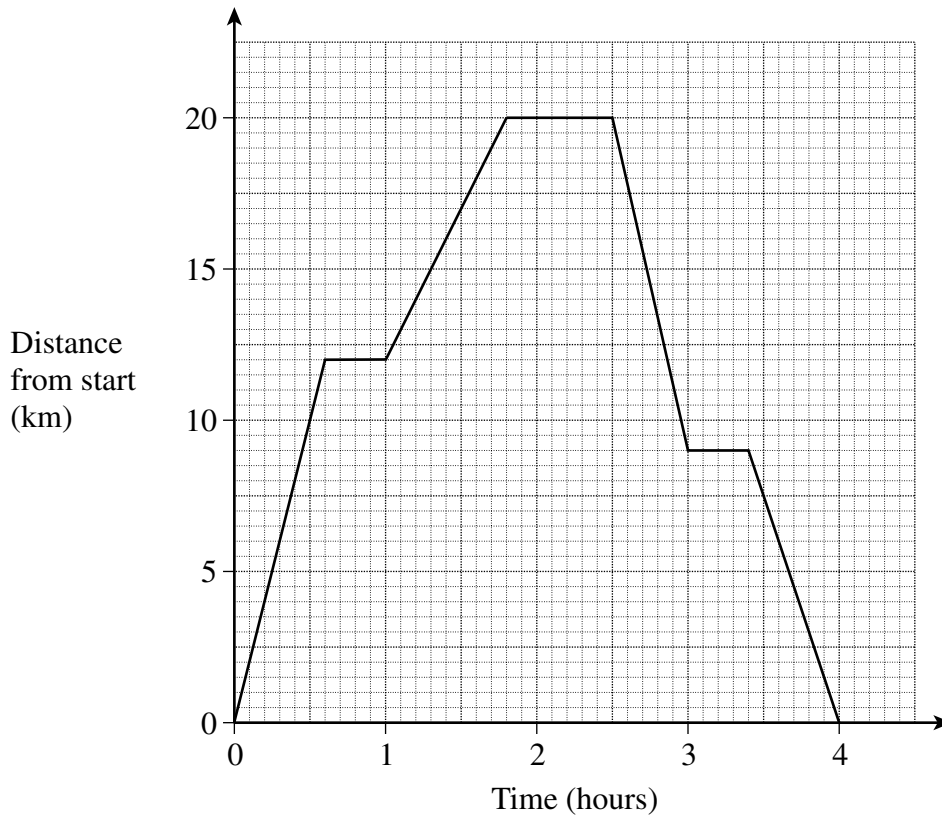
- (b) Ben wants to paint the four outside walls and the top of the container.
One tin of paint covers 6 m^2 .

How many tins of paint does Ben need?
You **must** show your working.

.....

Answer (4 marks)

23 The graph shows Adil’s bicycle journey.



(a) How many times does Adil stop on his journey?

Answer (1 mark)

(b) How many times is Adil exactly 10 km from the start of his journey?

Answer (1 mark)

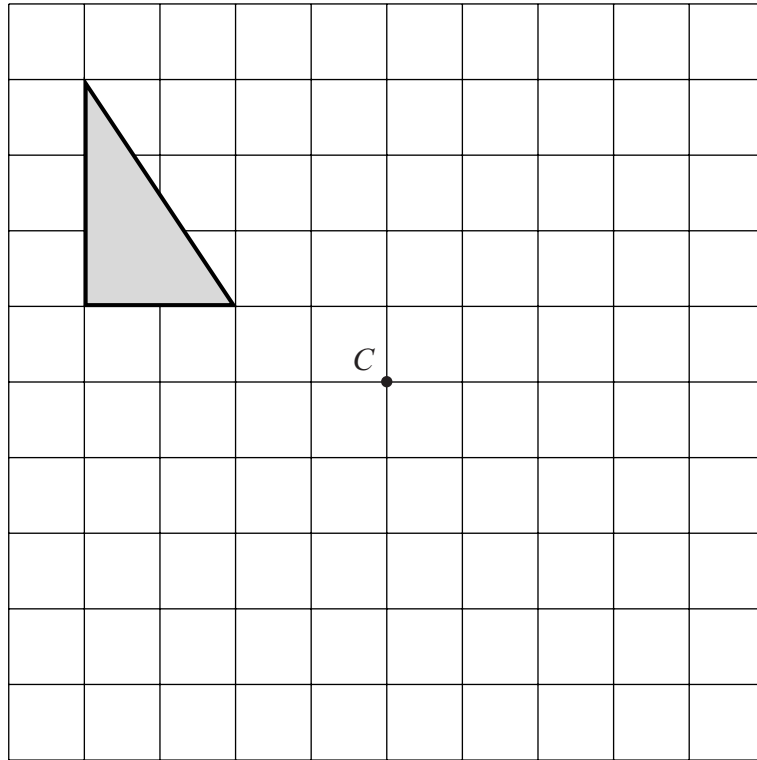
(c) What is the total distance that Adil travels on his journey?

.....
Answer km (1 mark)

(d) Calculate Adil’s average speed during the first 30 minutes of his journey.
Give your answer in kilometres per hour.

.....
.....
.....
Answer km/h (2 marks)

24 Rotate the triangle 90° clockwise about the point C .



(2 marks)

25 Divide £60 in the ratio 1:5

.....

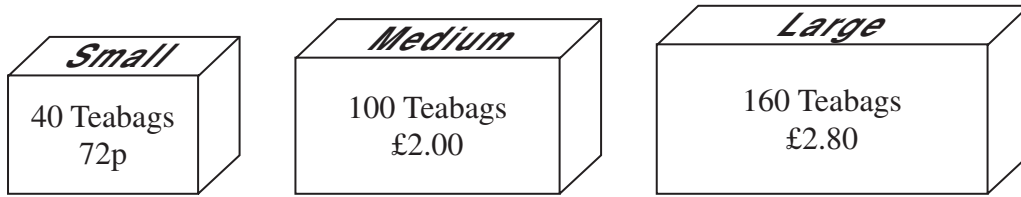
.....

.....

Answer £ and £ (2 marks)

Turn over ►

26 A supermarket sells boxes of the same brand of teabags in three different sizes.



Work out the cost of 20 teabags for each size.

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.....

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.....

Answer Small p Medium p Large p
(4 marks)

END OF QUESTIONS

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