

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

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General Certificate of Secondary Education
June 2006



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

3301/1F
F

Monday 5 June 2006 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	
18–19	
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 booklet.

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 booklet.

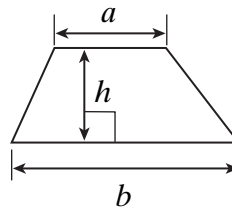
Advice

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

Formula Sheet: Foundation Tier

You may need to use the following formula:

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



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

1 Here are four number cards.



The number shown is 7281.

(a) Use all four cards to write down the largest number that you can make.

Answer (1 mark)

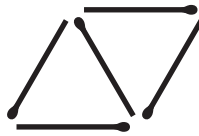
(b) Use all four cards to write down any even number that you can make.

Answer (1 mark)

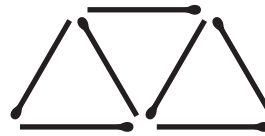
2 Catalina is making triangle patterns with matchsticks.



Pattern 1



Pattern 2



Pattern 3

(a) Draw Pattern 4 and Pattern 5 below.

(2 marks)

(b) Complete the table for the number of matchsticks in each pattern.

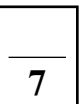
Pattern number	1	2	3	4	5
Number of matchsticks	3	5			

(2 marks)

(c) Explain how to find the number of matchsticks in Pattern 6 without drawing it.

.....

(1 mark)



Turn over ►

3 Fill in the missing digits to make the calculations correct.

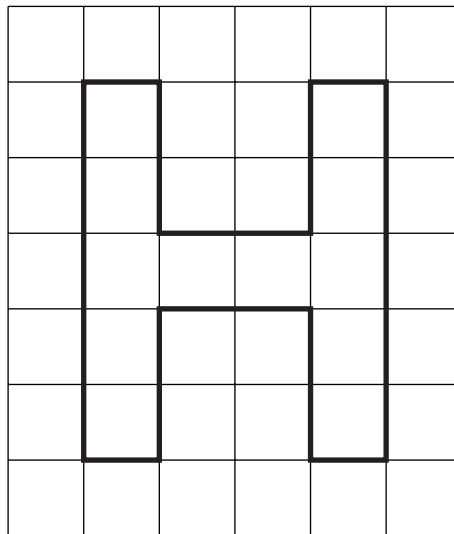
$$\begin{array}{r} \square 7 6 \\ + 2 \square 5 \\ \hline 9 2 \square \end{array}$$

(2 marks)

$$\begin{array}{r} \square 8 4 \\ - 1 \square 2 \\ \hline 4 5 \square \end{array}$$

(2 marks)

4 The letter H shape is drawn on a centimetre square grid.



(a) Write down the perimeter of the shape.

.....

Answer cm (1 mark)

(b) Write down the area of the shape.

.....

Answer cm² (1 mark)

5 Mr Gordon pays for a family holiday.

(a) Complete his bill.

Description	Cost
2 adults @ £540 each	
3 children @ £250 each	
Hire of car for 10 days @ £20 per day	
Total	£

(3 marks)

(b) Mr Gordon pays £240 by cheque for some foreign currency.
The cheque below shows how he completes it.

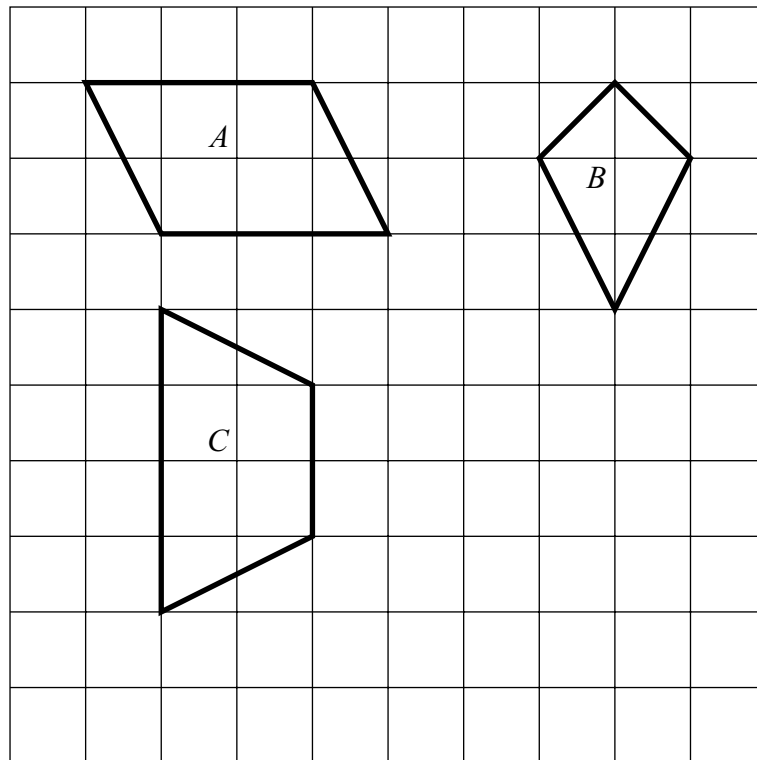
AQA Bank Limited Manchester M15 6EX	95-31-18 123456789
	<u>Date 5th June 2006</u>
<i>Pay</i> <u>Travel Tours</u>	
<i>Amount</i> <u>Two hundred and forty pounds</u>	£ 240.00
	<i>K Gordon</i>

Mr Gordon also pays for the family holiday by cheque.
Complete the cheque below in words **and** figures.

AQA Bank Limited Manchester M15 6EX	95-31-18 123456789
	<u>Date 5th June 2006</u>
<i>Pay</i> <u>Travel Tours</u>	
<i>Amount</i> _____	£
	<i>K Gordon</i>

(2 marks)

- 6 Matthew is drawing different quadrilaterals on a square grid. Here are three of his quadrilaterals.



- (a) What name is given to each quadrilateral?

Answer Quadrilateral *A*

Quadrilateral *B*

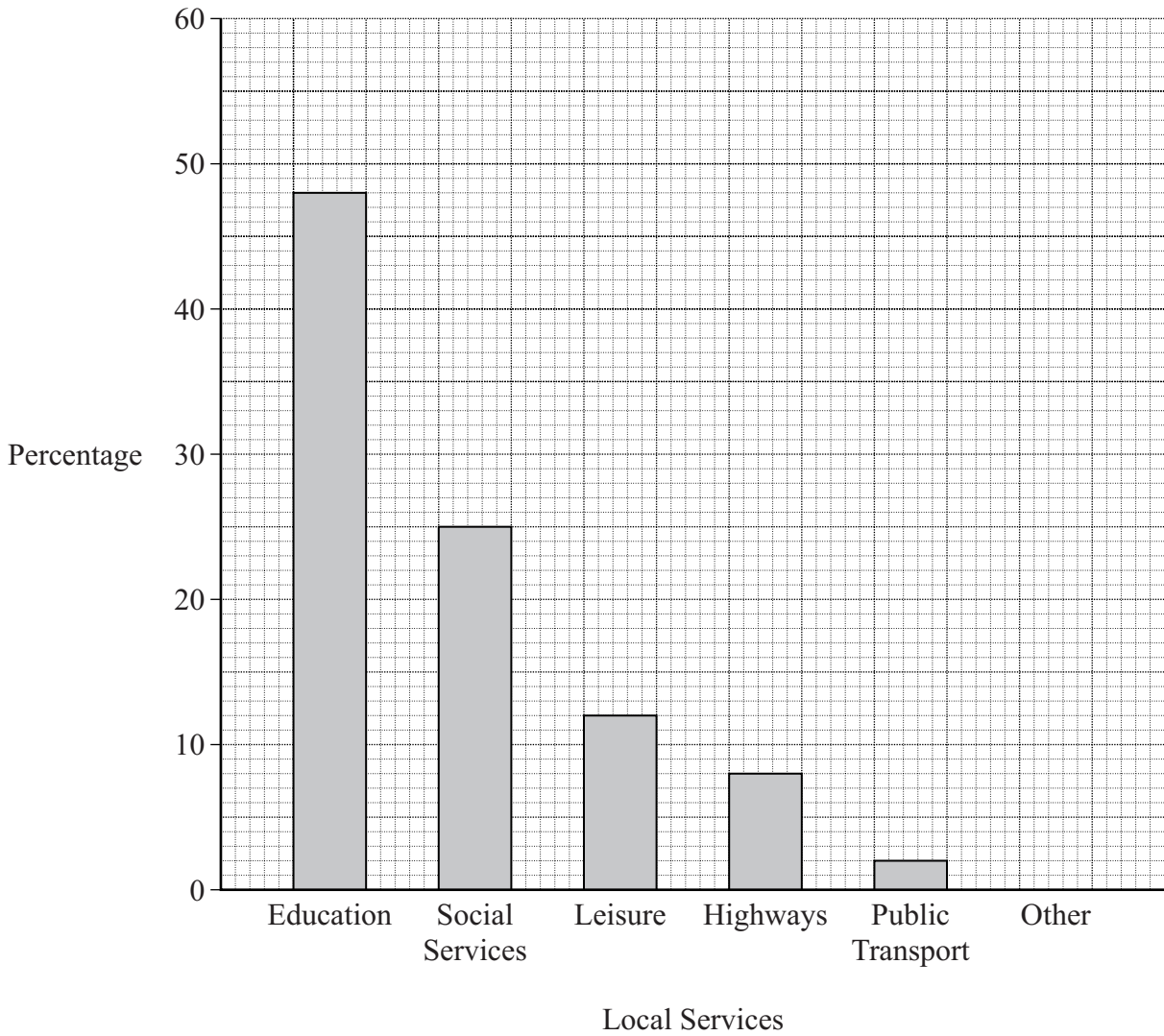
Quadrilateral *C*

(3 marks)

- (b) (i) On the grid draw a different type of quadrilateral. (1 mark)
- (ii) What is the name of the quadrilateral you have drawn?

Answer (1 mark)

7 The bar chart shows the percentages spent by a council on local services.



(a) What percentage is spent on Leisure?

Answer % (1 mark)

(b) Which service has most spent on it?

Answer (1 mark)

(c) Complete the bar chart for Other.

.....

 (2 marks)

8 Here is a sign outside a petrol station.

Petrol
80p per litre

- (a) Mrs Kitson buys 18 litres of petrol.
How much does she pay?

.....
.....

Answer £ (2 marks)

- (b) This flow chart shows how to change litres into gallons.



Use the flow chart to change 18 litres into gallons.

.....
.....

Answer gallons (2 marks)

- (c) Complete this flow chart to show how to change gallons into litres.



(2 marks)

9 Here is a formula $P = 10(x - y)$

Find the value of P when

(a) $x = 8$ and $y = 2$

.....

Answer $P =$ (2 marks)

(b) $x = 9.6$ and $y = 5.4$

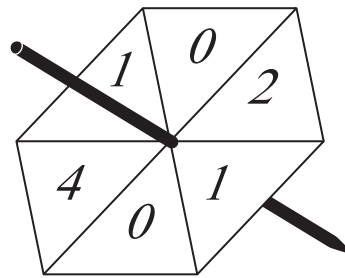
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.....

Answer $P =$ (2 marks)

10 Richard has this six-sided spinner. When it is spun, it has an equal chance of landing on any side.



(a) What is the probability that the spinner

(i) lands on 4,

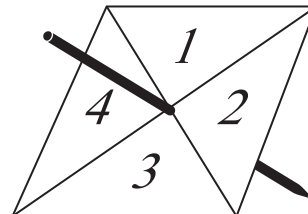
Answer (1 mark)

(ii) does **not** land on 1?

Answer (1 mark)

(b) Ruth makes this four-sided spinner. She spins it 60 times. This table show her results.

Number	1	2	3	4
Frequency	16	14	15	15



Do you think that Ruth's spinner is fair?
Give a reason for your answer.

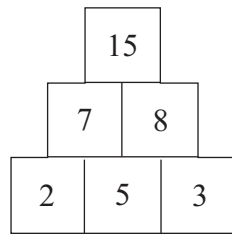
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(2 marks)

Turn over

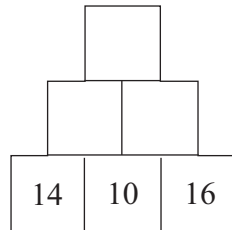
11 Here is a pyramid pattern.



Each number is found by adding the two numbers directly below.
For example, $7 = 2 + 5$

(a) Complete the following pyramid patterns.

(i)

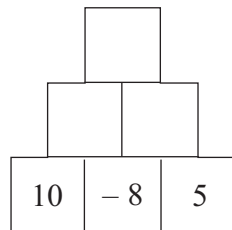


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(2 marks)

(ii)

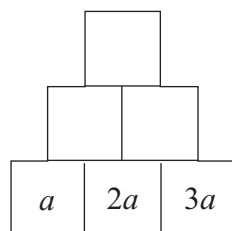


.....

.....

(3 marks)

(b) Complete this algebraic pyramid pattern.



.....

.....

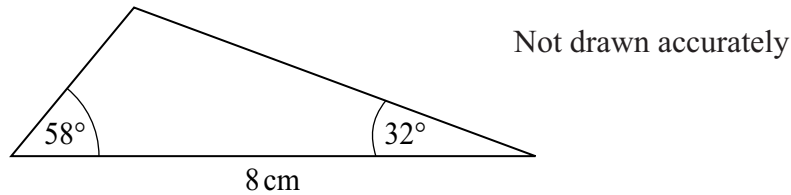
(3 marks)

12 Tick the correct boxes to say whether the following statements are true or false.

- | | True | False |
|---|--------------------------|--------------------------|
| (a) 1 pound is approximately 450 grams. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) 1 foot is approximately 15 centimetres. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) 1 mile is approximately 1.6 kilometres. | <input type="checkbox"/> | <input type="checkbox"/> |

(3 marks)

13 Here is a sketch of a triangle.



In the space below, make an accurate drawing of the triangle.

(3 marks)

- 14 Write the following in order, starting with the smallest.

0.22

 $\frac{3}{20}$

19%

You **must** show your working.

.....

.....

.....

.....

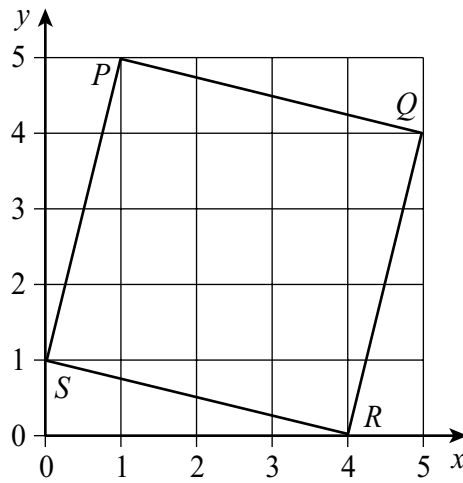
Answer,, (3 marks)

- 15 The table shows a way of writing numbers using powers of 10.
Complete the table.

200	2×100	2×10^2
5000	5×1000
70 000	$7 \times$

(3 marks)

16 The square $PQRS$ is drawn on a centimetre square grid.



- (a) The coordinates of P are $(1, 5)$.
Write down the coordinates of Q , R and S .

Answer Q (..... ,)
 R (..... ,)
 S (..... ,)
 (2 marks)

- (b) Calculate the area of square $PQRS$.
You **must** show your working.
State the units of your answer.

.....

Answer (4 marks)

17 A supermarket sells 500 kg of potatoes.

$\frac{3}{10}$ of the potatoes are sold in 5 kg bags.

How many 5 kg bags of potatoes does the supermarket sell?

.....

.....

.....

.....

.....

Answer bags (4 marks)

18 A bag contains blue, red and green cards only.

One card is taken at random from the bag.

The table shows the probabilities of taking a blue card and a red card.

Colour	Blue	Red	Green
Probability	0.3	0.5	

(a) What is the probability of taking a card that is **not** blue from the bag?

.....

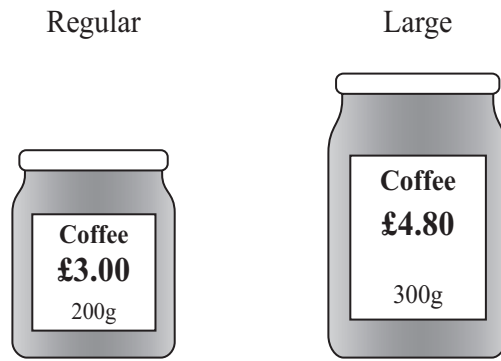
Answer (1 mark)

(b) Complete the table to show the probability of taking a green card from the bag.

.....

(1 mark)

19 A supermarket sells jars of coffee of the same brand in two different sizes.



Which jar gives the better value for money?
You **must** show your working.

.....

.....

.....

.....

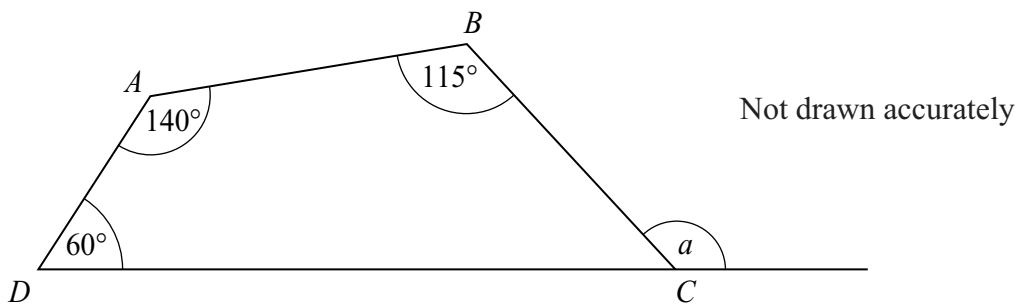
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Answer (3 marks)

20 $ABCD$ is a quadrilateral.



Work out the size of the exterior angle a .

.....

.....

.....

.....

Answer degrees (3 marks)

21 Tina records this data in a survey about how students travel to school.

Gender	Method of travel
Girl	Bus
Boy	Walk
Girl	Car
Boy	Bus
Girl	Walk
Boy	Car
Girl	Bike
Boy	Walk
Girl	Walk
Girl	Walk

(a) Complete this two-way table to show Tina’s data.

	Walk	Other
Boy	2	
Girl		

(2 marks)

(b) Tina looks at her data.
She says it shows that girls are more likely to walk to school than boys.
Is this true?
Give a reason for your answer.

.....

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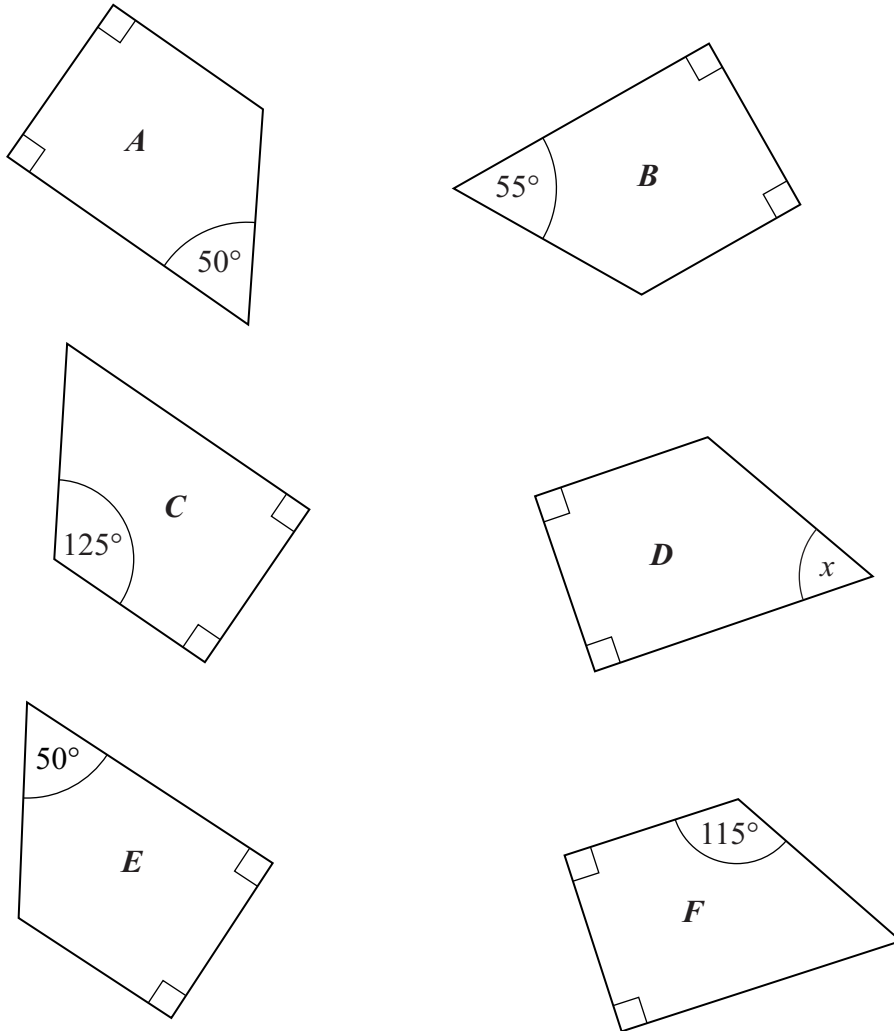
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(2 marks)

- 22 Rebecca has three rectangular sheets of paper.
She cuts each sheet into two pieces.
She now has the six pieces, *A* to *F*, shown below.

Not drawn accurately



- (a) Which piece is part of the same rectangle as *A*?

Answer (1 mark)

- (b) Which piece is part of the same rectangle as *B*?

Answer (1 mark)

- (c) Calculate the size of angle x on piece *D*.

.....

Answer $x =$ degrees (2 marks)

23 (a) Simplify $2x + 8 + 4x - 3$

.....

Answer (2 marks)

(b) Solve these equations.

(i) $\frac{x}{3} = 5$

.....

Answer $x =$ (1 mark)

(ii) $2(3y - 5) = 20$

.....

Answer $y =$ (3 marks)

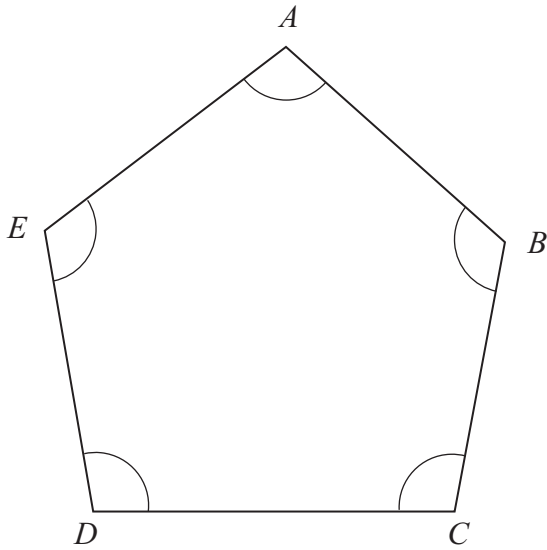
24 Use approximations to estimate the value of

$$\frac{103.2 \times 32.6}{18.7}$$

.....

Answer (2 marks)

25 $ABCDE$ is a regular pentagon.



Not drawn accurately

Calculate the size of each interior angle.

.....

.....

.....

.....

Answer degrees (3 marks)

26 x is an odd number.

(a) Write down, in terms of x , the odd number after x .

.....

Answer (1 mark)

(b) Write down, in terms of x , the odd number before x .

.....

Answer (1 mark)

END OF QUESTIONS

There are no questions printed on this page