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Centre Number						Candidate Number					
Candidate Signature											

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General Certificate of Secondary Education  
June 2005



**MATHEMATICS (MODULAR) (SPECIFICATION B) 33005/F1**  
**Module 5 Foundation Tier**  
**Paper 1 Non-Calculator**

**F**

Tuesday 7 June 2005 1.30 pm to 2.30 pm

<p><b>In addition to this paper you will require:</b> mathematical instruments.</p> <p>You must <b>not</b> 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

**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 in the spaces provided.
- Do all rough work in this booklet.

**Information**

- The maximum mark for this paper is 60.
- Mark allocations are shown in brackets.
- Additional answer paper, graph paper and tracing paper will be issued on request and must be tagged securely to this answer booklet.

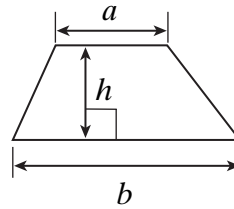
**Advice**

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

**Formula Sheet: Foundation Tier**

You may need to use the following formula:

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



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

1 Here is a sequence of numbers.

1, 2, 4, 8, ...

(a) Write down the next number in the sequence.

.....

Answer ..... (1 mark)

(b) The 10th number in this sequence is 512.

Explain how you could work out the 9th number in the sequence.

.....

.....

(1 mark)

2 (a) Work out 25% of 60

.....

.....

.....

Answer ..... (2 marks)

(b) Work out 25% of 30

.....

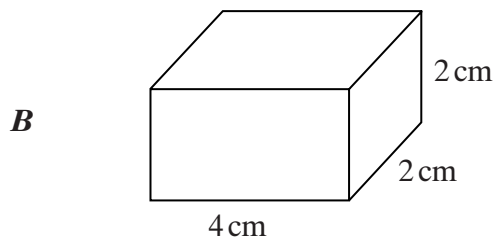
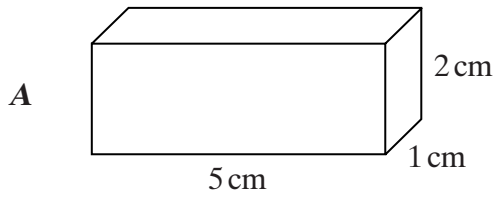
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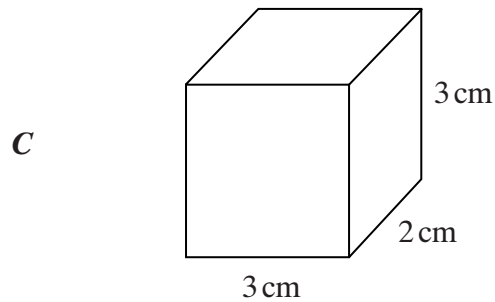
Answer ..... (1 mark)

Turn over 

- 3 Here are three cuboids *A*, *B* and *C*.  
Their nets *X*, *Y* and *Z* are drawn on centimetre grids opposite.



Diagrams not drawn accurately



- (a) Complete the sentences.

(i) Cuboid *A* can be made from net .....

(1 mark)

(ii) Cuboid *B* can be made from net .....

(1 mark)

(iii) Cuboid *C* can be made from net .....

(1 mark)

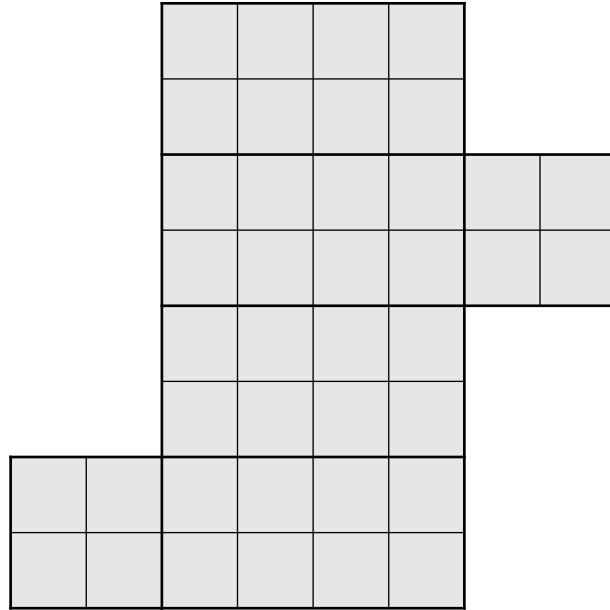
- (b) Which cuboid has the largest surface area?

.....

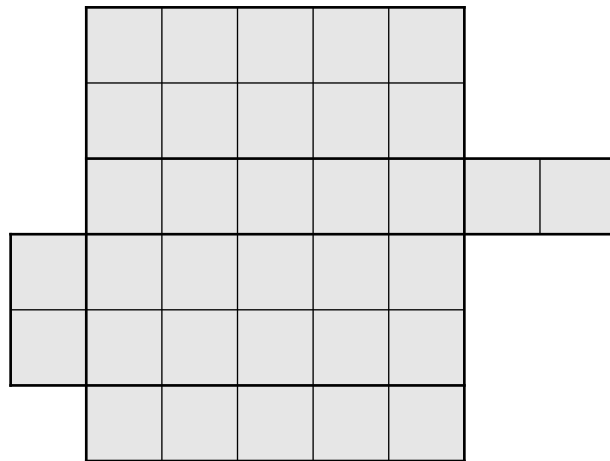
.....

Answer ..... (2 marks)

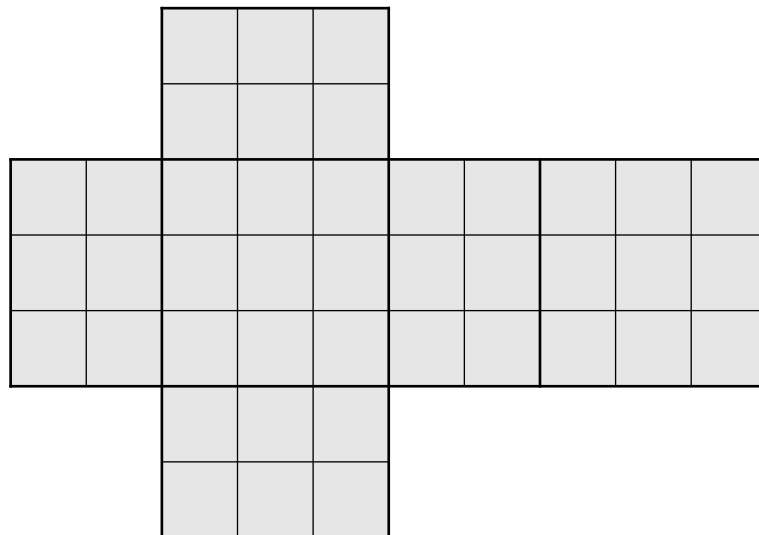
**X**



**Y**

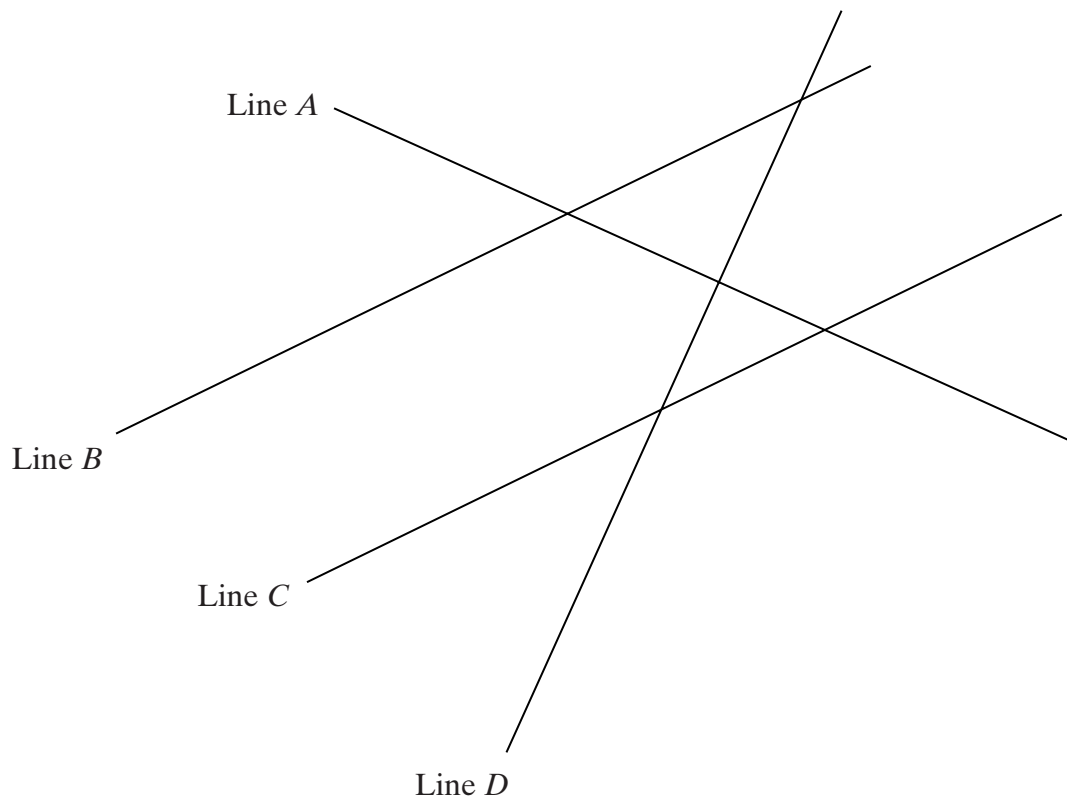


**Z**



Turn over 

4 The diagram shows four straight lines  $A$ ,  $B$ ,  $C$  and  $D$ .



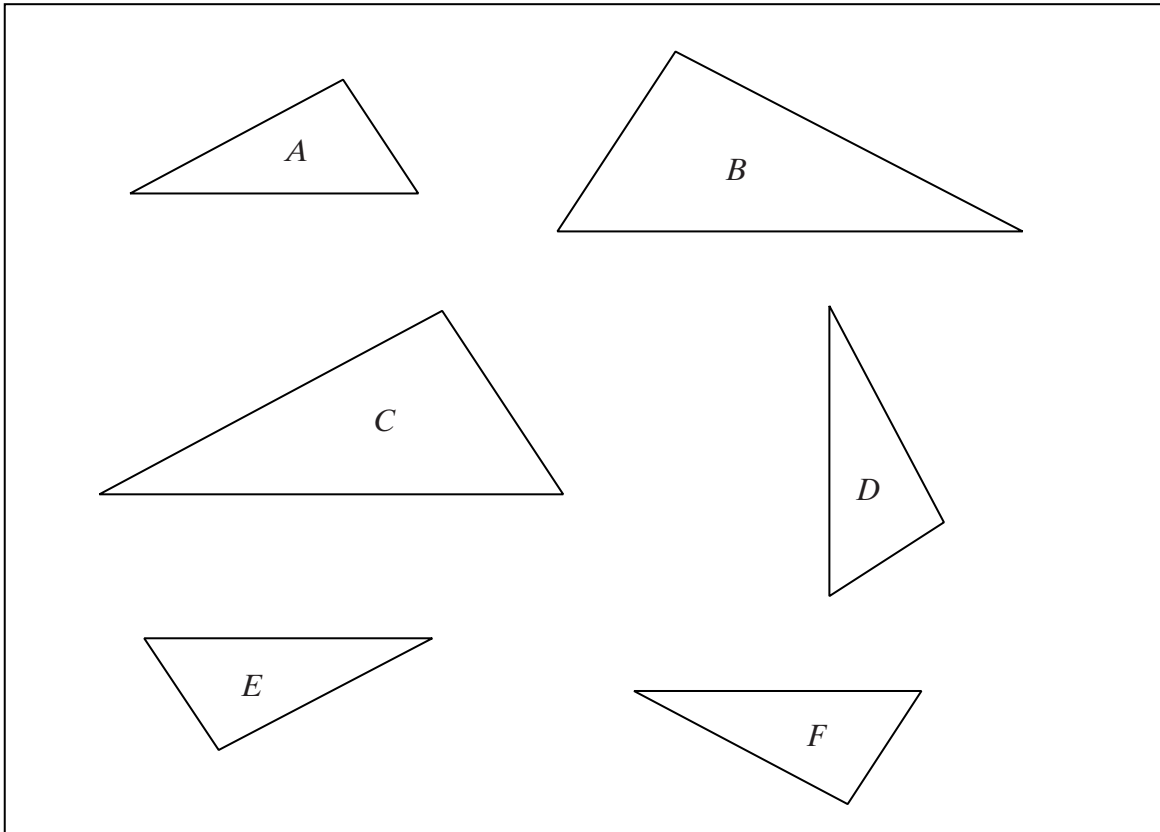
(a) Which two lines are parallel?

Answer ..... (1 mark)

(b) Which two lines are at right angles to each other?

Answer ..... (1 mark)

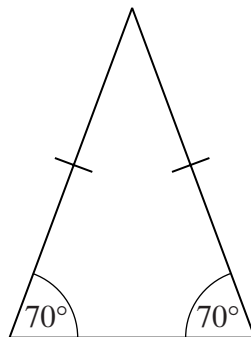
- 5 (a) The diagram shows six triangles.



Which triangles are congruent to triangle *A*?

Answer ..... (2 marks)

- (b) Here is a different triangle.

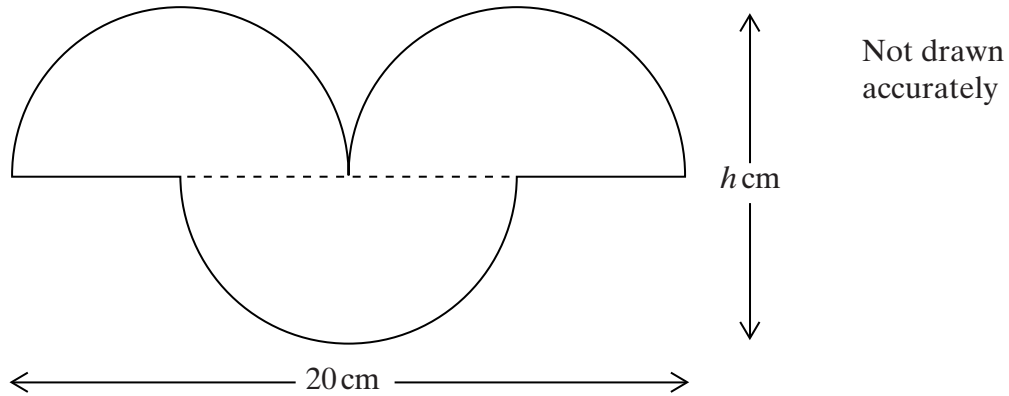


What is the special name given to this triangle?

Answer ..... (1 mark)

Turn over ►

- 6 The diagram shows a shape made from three identical semicircles. The width of the shape is 20 cm.



- (a) Work out the radius of one of the semicircles.

.....

Answer ..... cm (1 mark)

- (b) Work out the height of the shape, marked  $h$  on the diagram.

.....

Answer ..... cm (1 mark)

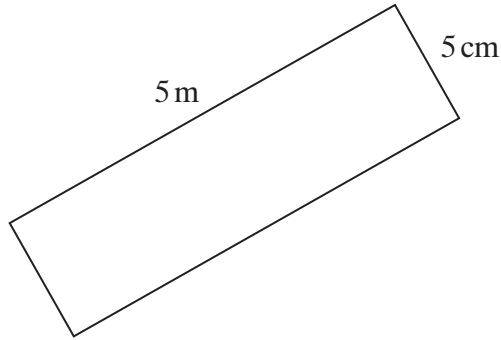


7 (a) Convert 5 metres into centimetres.

.....

Answer ..... cm (1 mark)

(b) The diagram shows a rectangle.



Not to scale

Work out the perimeter.  
Give your answer in centimetres.

.....

.....

Answer ..... cm (2 marks)

**TURN OVER FOR THE NEXT QUESTION**

8 (a) Here is a list of numbers.

3    18    22    49    51    56    58    68

(i) Which two numbers from the list add up to 100?

.....

Answer ..... (1 mark)

(ii) Which two numbers from the list are multiples of 7?

Answer ..... (2 marks)

(b) Explain how you know that 62 is **not** divisible by 7.

.....

.....

(1 mark)

(c) The  $n$ th term of a sequence is  $7n - 1$

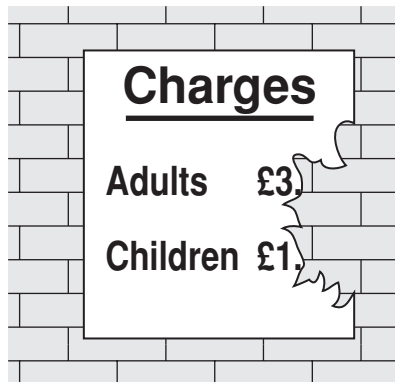
Write down the first **three** terms of the sequence.

.....

.....

Answer ..... (2 marks)

9 Part of the charges sign at a museum is missing.



The total charge for one adult and two children is exactly £6.

Use the information on the sign to work out **two** different sets of possible charges for one adult and two children.

Fill in your answers on the receipts below.

.....

.....

.....

.....

.....

.....

<b>Museum</b>	
<b>Adult</b>	.....
<b>Child</b>	.....
<b>Child</b>	.....
<hr/>	
<b>Total:</b>	<b>£6.00</b>

<b>Museum</b>	
<b>Adult</b>	.....
<b>Child</b>	.....
<b>Child</b>	.....
<hr/>	
<b>Total:</b>	<b>£6.00</b>

(4 marks)

Turn over ►

10 Here is a conversion table for litres and pints.

<b>Litres</b>	<b>Pints</b>
1	1.75
5	8.75
10	17.5
20	35

(a) Use the table to convert 100 litres to pints.

.....

Answer ..... pints (1 mark)

(b) Use the table to convert 21 litres to pints.

.....

.....

.....

Answer ..... pints (2 marks)

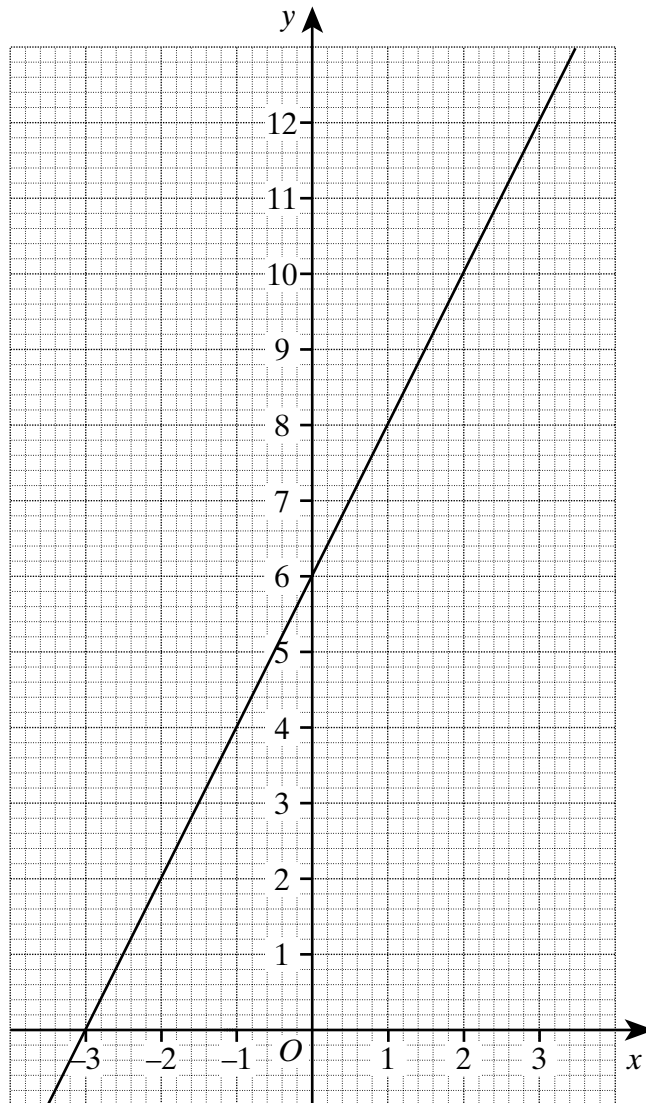
- 11 (a) Abe thinks of a number, doubles it and then adds 6.  
The answer is 20.

What is the number?

.....

Answer ..... (2 marks)

- (b) The graph shows the line  $y = 2x + 6$



- (i) Use the graph to find  $x$  when  $y = 10$

Answer  $x =$  ..... (1 mark)

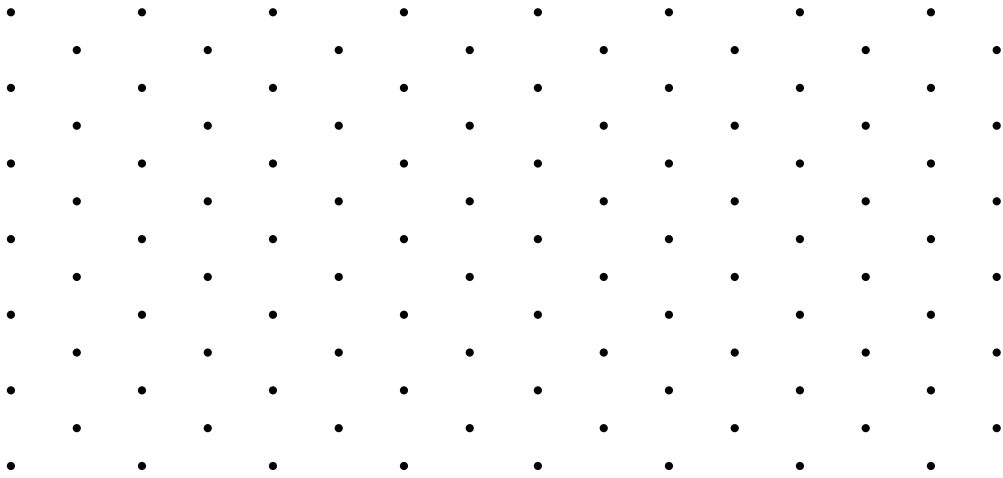
- (ii) Use the graph to find  $x$  when  $y = 1$

Answer  $x =$  ..... (1 mark)

Turn over ►



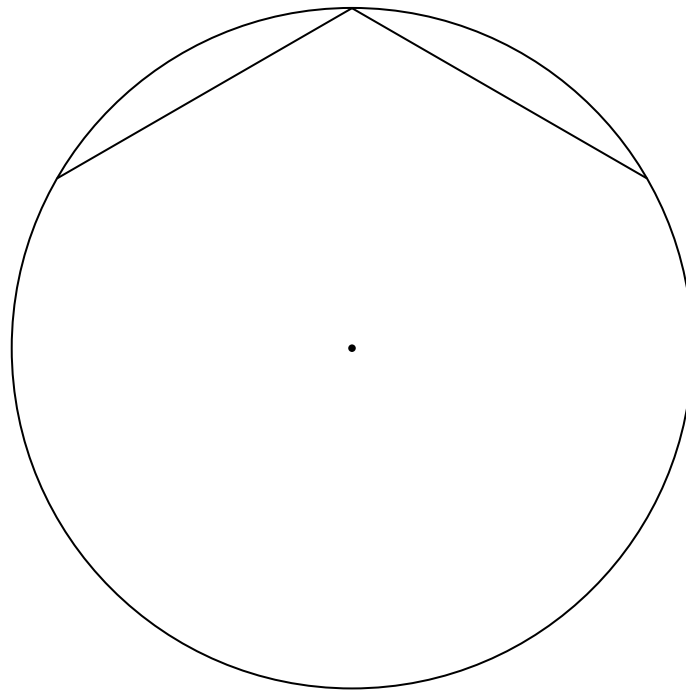
- 12 (a) Use the isometric grid to draw a regular hexagon.



(1 mark)

- (b) Two sides of a regular hexagon have been drawn in the circle.

Complete the regular hexagon.



(2 marks)

13 (a) Use the formula  $a = 5b + 2c$  to work out  $a$  when  $b = 3$  and  $c = -4$

.....  
.....

Answer ..... (2 marks)

(b) Use the formula  $a = 5b + 2c$  to work out  $c$  when  $a = 16$  and  $b = 2$

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

Answer ..... (3 marks)

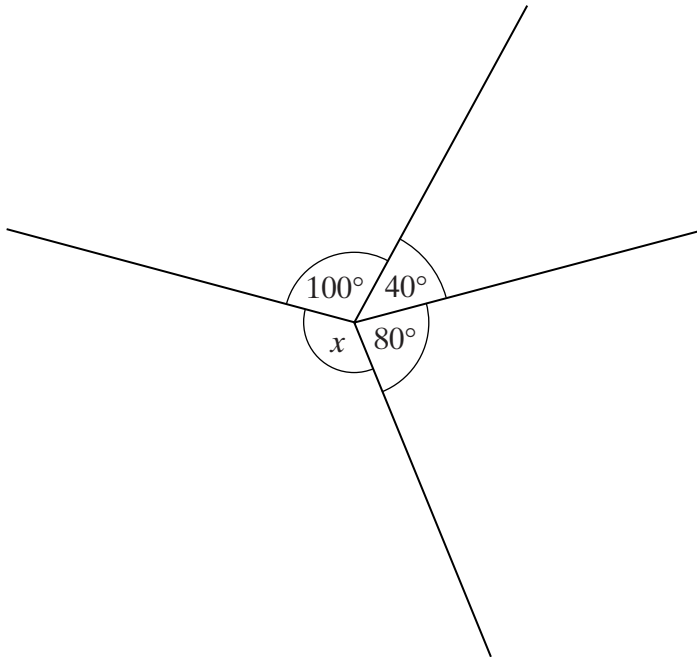
14 Work out  $0.3 \times 100 + 2.4 \times 10$

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

Answer ..... (2 marks)

**TURN OVER FOR THE NEXT QUESTION**

15



Not drawn accurately

Work out the size of angle  $x$ .

.....

.....

.....

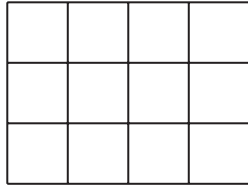
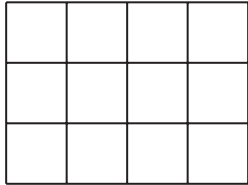
.....

Answer ..... degrees (2 marks)



16 Which is larger  $\frac{5}{6}$  or  $\frac{3}{4}$  ?

You **must** show your working.  
You may use the grids to help you.



.....

.....

.....

.....

Answer ..... (2 marks)

17  $p$  and  $q$  are odd numbers.

(a) Is  $p + q$  an odd number, an even number or could it be either?  
Tick the correct box.

odd

even

either

(1 mark)

(b) Is  $pq$  an odd number, an even number or could it be either?  
Tick the correct box.

odd

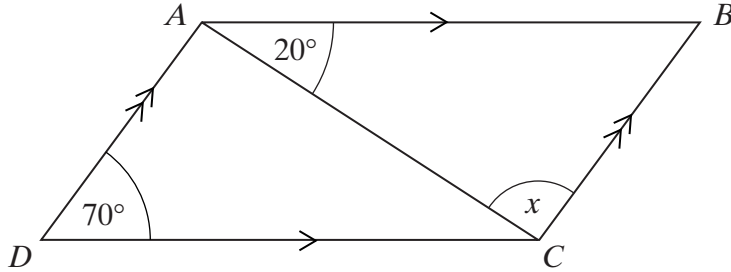
even

either

(1 mark)

Turn over 

- 18** The diagram shows a parallelogram  $ABCD$ .  
 Angle  $BAC = 20^\circ$   
 Angle  $ADC = 70^\circ$



Not drawn accurately

- (a) Show that angle  $x$  is a right angle.

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

(2 marks)

- (b) The area of the triangle  $ADC$  is  $8.4 \text{ cm}^2$ .

Work out the area of the parallelogram.

.....  
 .....

Answer .....  $\text{cm}^2$  (2 marks)

**19** Solve  $5x - 4 = 3x + 2$

.....

.....

.....

.....

Answer  $x =$  ..... (3 marks)

**END OF QUESTIONS**

**THERE ARE NO QUESTIONS PRINTED ON THIS PAGE**