

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

For Examiner's Use
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General Certificate of Secondary Education  
June 2007



**MATHEMATICS (MODULAR) (SPECIFICATION B)**  
**Module 5 Foundation Tier**  
**Paper 2 Calculator**

33005/F2

**F**

Monday 11 June 2007 9.00 am to 10.00 am

<p><b>For this paper you must have:</b></p> <ul style="list-style-type: none"> <li>• a calculator</li> <li>• mathematical instruments.</li> </ul>	
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For Examiner's Use	
Pages	Mark
3	
4–5	
6–7	
8–9	
10–11	
12–13	
14	
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.
- Answer the questions in the spaces provided.
- Use a calculator where appropriate.
- Do all rough work in this book.
- If your calculator does not have a  $\pi$  button, take the value of  $\pi$  to be 3.14 unless another value is given in the question.

**Information**

- The maximum mark for this paper is 60.
- 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**

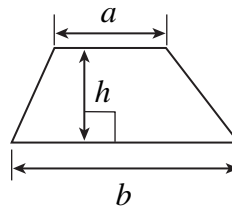
- In all calculations, show clearly how you work out your answer.

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**Formula Sheet: Foundation Tier**

You may need to use the following formula:

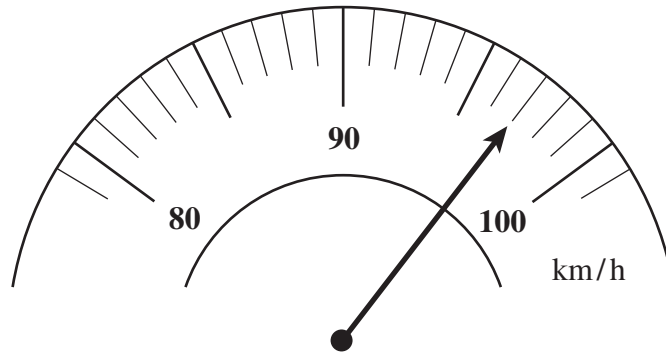
$$\text{Area of trapezium} = \frac{1}{2}(a+b)h$$



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

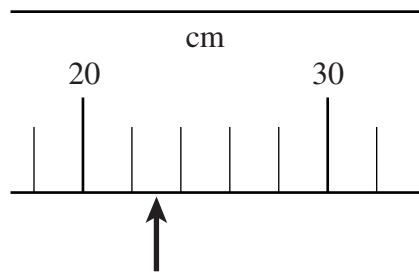
1 (a) Write down the value shown by the arrow on each of these scales.

(i)



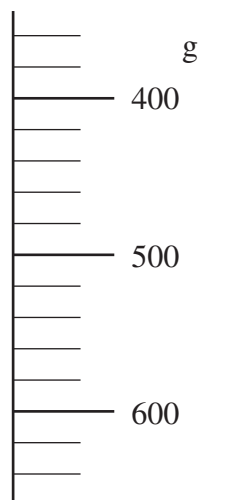
Answer ..... km/h (1 mark)

(ii)



Answer ..... cm (1 mark)

(b) The scale below measures mass in grams.



Draw an arrow against the point on the scale that shows 560 grams.

(1 mark)

Turn over ►

2 Write down the metric units that are used to measure

(a) the length of a basketball court

Answer ..... (1 mark)

(b) the thickness of a coin

Answer ..... (1 mark)

(c) the capacity of a kettle.

Answer ..... (1 mark)

3 (a) Write down **all** the factors of 21.

.....

Answer ..... (2 marks)

(b) Write down the **two** numbers that are factors of both 21 and 49.

.....

.....

Answer ..... and ..... (2 marks)

(c) Write the fraction  $\frac{21}{49}$  in its simplest form.

.....

.....

Answer ..... (1 mark)

- 4 Gemma and Kerry work at PoshFrocks selling dresses. Their weekly pay is worked out from this formula.

$$\text{Pay} = \text{£}155 \text{ plus an extra } \text{£}35 \text{ for each dress they sell.}$$

- (a) Gemma sells 8 dresses in one week.

Work out her pay for this week.

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

Answer £ ..... (2 marks)

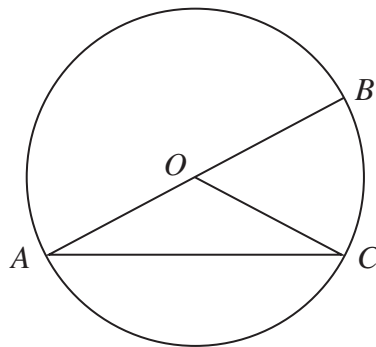
- (b) Kerry is paid £330 for one week's work.

How many dresses did she sell?

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

Answer ..... (2 marks)

- 5 In the diagram, *O* is the centre of the circle.



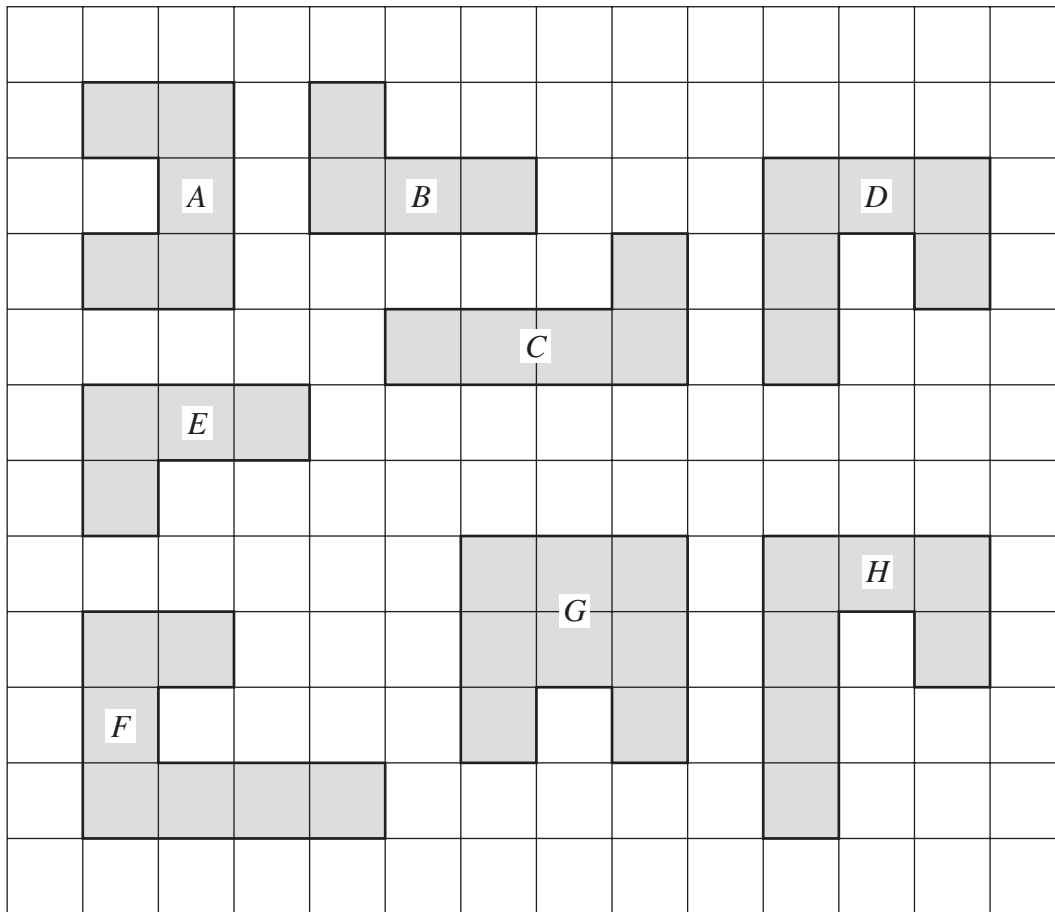
Use a word from this list to complete each of the sentences below.

chord      circumference      tangent      radius      diameter

- (a) *AB* is a ..... of the circle. (1 mark)  
 (b) *OC* is a ..... of the circle. (1 mark)  
 (c) *AC* is a ..... of the circle. (1 mark)

Turn over ►

6 Some of these shapes are congruent to each other.



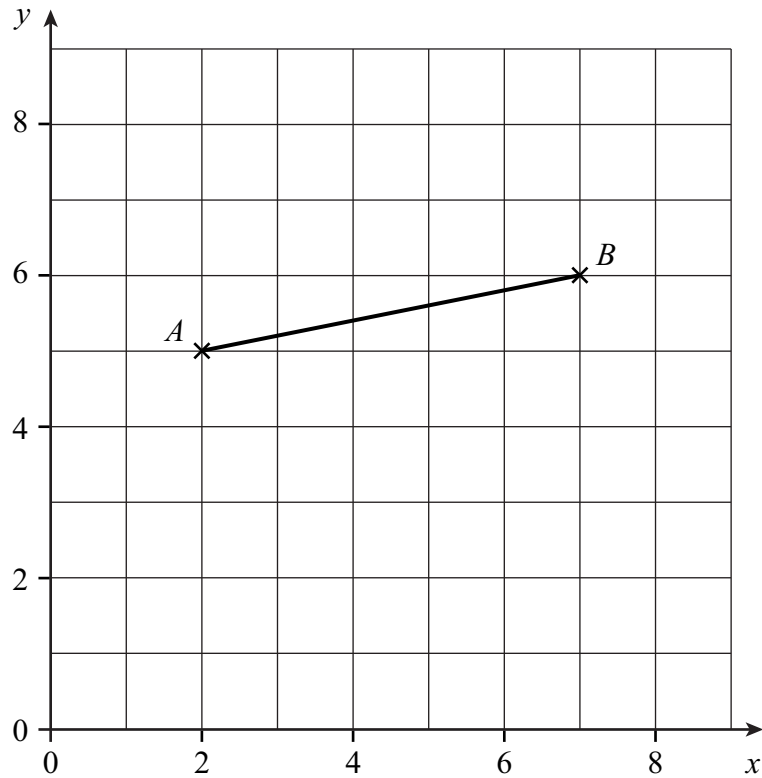
(a) Find a shape that is congruent to *B*.

Answer ..... (1 mark)

(b) Find another pair of congruent shapes.

Answer ..... and ..... (1 mark)

7



- (a) Write down the coordinates of the point  $A$ .

Answer ( ..... , ..... ) (1 mark)

- (b) Plot the point  $C$  (7, 1)

(1 mark)

$A$ ,  $B$  and  $C$  are three corners of a parallelogram  $ABCD$ .

- (c) Join  $BC$  and draw two more lines to complete the parallelogram.

(1 mark)

- (d) Write down the coordinates of the point  $D$ .

Answer ( ..... , ..... ) (1 mark)

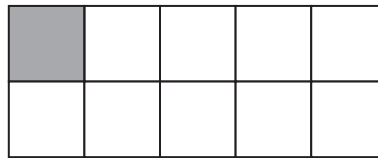
Turn over ►

- 8 (a) Shade 50% of this rectangle.



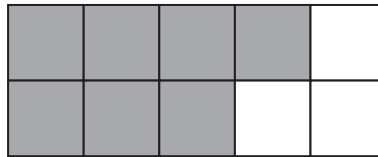
(1 mark)

- (b) What percentage of this rectangle is shaded?



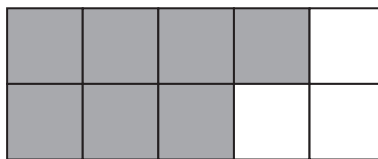
Answer ..... % (1 mark)

- (c) What fraction of this rectangle is shaded?



Answer ..... (1 mark)

- (d) Explain why the fraction of the rectangle that is **not** shaded is equivalent to 0.3



.....

.....

.....

(1 mark)



9

**A E F H M N**Write down **one** letter from this list which has

- (a) no lines of symmetry

Answer ..... (1 mark)

- (b) only one line of symmetry

Answer ..... (1 mark)

- (c) two lines of symmetry

Answer ..... (1 mark)

- (d) rotational symmetry of order 2.

Answer ..... (1 mark)

- 10**
- (a) Calculate
- $3.4^2$

Answer ..... (1 mark)

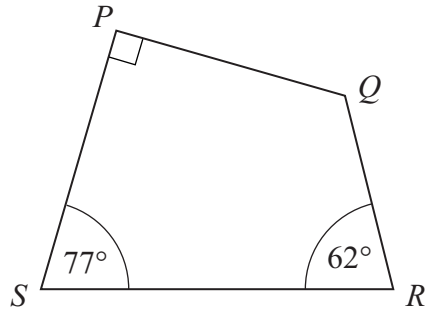
- (b) Calculate 12% of £3570

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.....  
.....

Answer £ ..... (2 marks)

Turn over ►

- 11 (a)  $PQRS$  is a quadrilateral with a right angle at  $P$ .  
Angle  $S = 77^\circ$  and angle  $R = 62^\circ$



Not drawn accurately

Find the size of angle  $Q$ .

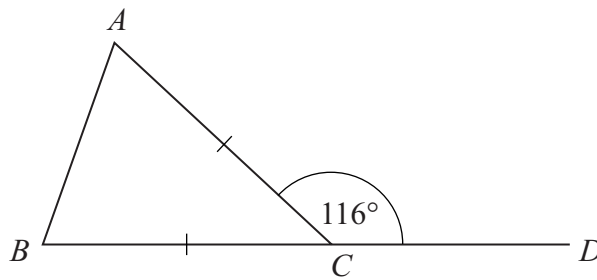
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Answer ..... degrees (2 marks)

- (b)  $ABC$  is an isosceles triangle with  $AC = BC$   
The side  $BC$  is extended to  $D$ .  
Angle  $ACD = 116^\circ$



Not drawn accurately

Find the size of angle  $A$ .

.....

.....

.....

.....

Answer ..... degrees (3 marks)

12 Here is a number pattern.

Line 1  $1 = \frac{1 \times 2}{2}$

Line 2  $1 + 2 = \frac{2 \times 3}{2}$

Line 3  $1 + 2 + 3 = \frac{3 \times 4}{2}$

Line 4  $1 + 2 + 3 + 4 = \frac{4 \times 5}{2}$

Line 5  $1 + 2 + 3 + 4 + 5 = \dots\dots\dots$

Line 6  $\dots\dots\dots = \dots\dots\dots$

(a) Complete line 5 of the pattern.

(1 mark)

(b) Write down line 6 of the pattern.

(1 mark)

(c) Use the pattern to find the sum of the whole numbers from 1 to 24.  
You **must** show your working.

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

Answer ..... (2 marks)

- 13** 1 ounce = 28.33 grams  
Nikki says that 16 ounces is less than half a kilogram.

Is she correct?  
You **must** show your working.

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

(3 marks)

- 14** Dean picks three numbers.  
His first number is  $y$ .  
His second number is five more than his first number.

(a) Write down his second number in terms of  $y$ .

Answer ..... (1 mark)

(b) His third number is double his first number.

Write down his third number in terms of  $y$ .

Answer ..... (1 mark)

(c) Write down an expression for the sum of the three numbers.

Answer ..... (1 mark)

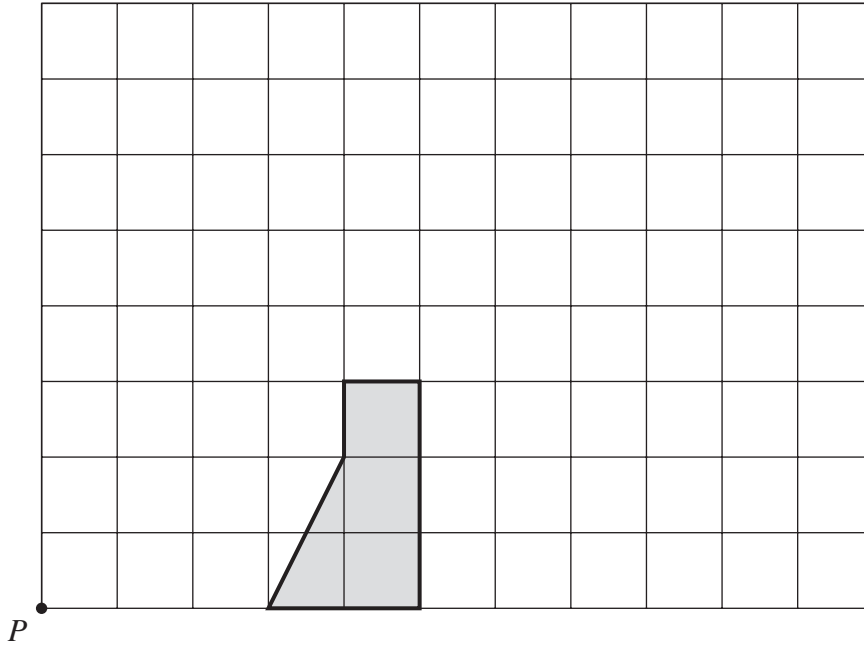
(d) The sum of the three numbers is 77.

Form an equation and solve it to find the value of  $y$ .

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

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

- 15 Enlarge the shaded shape by scale factor 2, using the point  $P$  as the centre of enlargement.

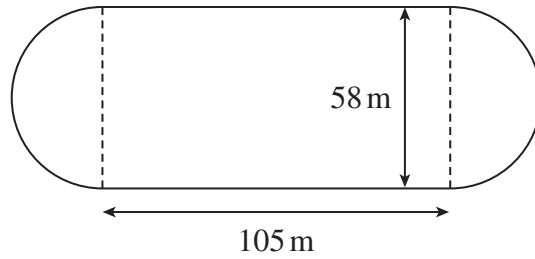


(3 marks)

**Turn over for the next question**

Turn over ►

- 16 The diagram shows a running track, made up of a rectangle plus two semicircles.



Not drawn accurately

Joel runs once round the perimeter of the track.

How far does he run?

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Answer ..... m (4 marks)

**END OF QUESTIONS**

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