

Surname	Centre Number	Candidate Number
Other Names		0



GCSE LINKED PAIR PILOT

4364/01



S15-4364-01

METHODS IN MATHEMATICS

UNIT 2: Methods (Calculator)

FOUNDATION TIER

A.M. MONDAY, 8 June 2015

1 hour 30 minutes

ADDITIONAL MATERIALS

A calculator will be required for this paper.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

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

Take π as 3.14 or use the π button on your calculator.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part-question.

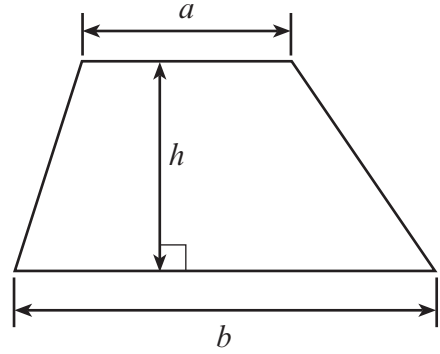
You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question **6**.

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	10	
2.	6	
3.	2	
4.	6	
5.	8	
6.	8	
7.	5	
8.	7	
9.	6	
10.	3	
11.	5	
12.	2	
13.	3	
14.	6	
15.	3	
Total	80	

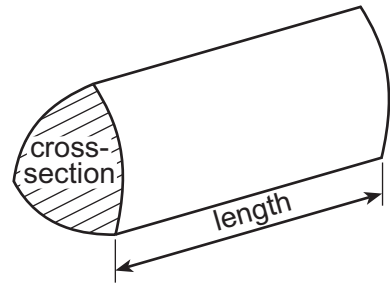
4364
010001

Formula List

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



Volume of prism = area of cross-section \times length



1. (a) (i) Write down the **smallest** four digit number that can be written using all the digits 5, 8, 2 and 1. [1]

--	--	--	--

- (ii) Write down the **largest even** four digit number that can be written using all the digits 5, 8, 2 and 1. [1]

--	--	--	--

- (b) In the following list, draw a circle around each number that has the same value as 0.1. [2]

10% **1%** $\frac{1}{100}$ $\frac{1}{10}$ **0.1%**

- (c) (i) Write down the value of double fifteen thousand. [1]

.....

- (ii) Write down the value of three quarters of a hundred. [1]

.....

- (d) Circle the numbers that are divisible by 6. [2]

9 **10** **11** **12** **13** **14**
15 **16** **17** **18** **19**
20 **21** **22** **23**

- (e) Use either the symbol < or > to make each statement true. [2]

8 3
-2 9
-10 -20

2. (a) Work out each of the following:

[2]

$$\frac{4+6}{2} \times 7 = \dots\dots\dots$$

$$\frac{50 \times 10}{5+15} = \dots\dots\dots$$

(b) Using the cards below, fill in the blanks to make the calculations correct.
Each card must be used only once.

[4]



1	4	+			=	4	2
---	---	---	--	--	---	---	---

		-	5	3	=	4	3
--	--	---	---	---	---	---	---

		+			=	1	0	0
--	--	---	--	--	---	---	---	---

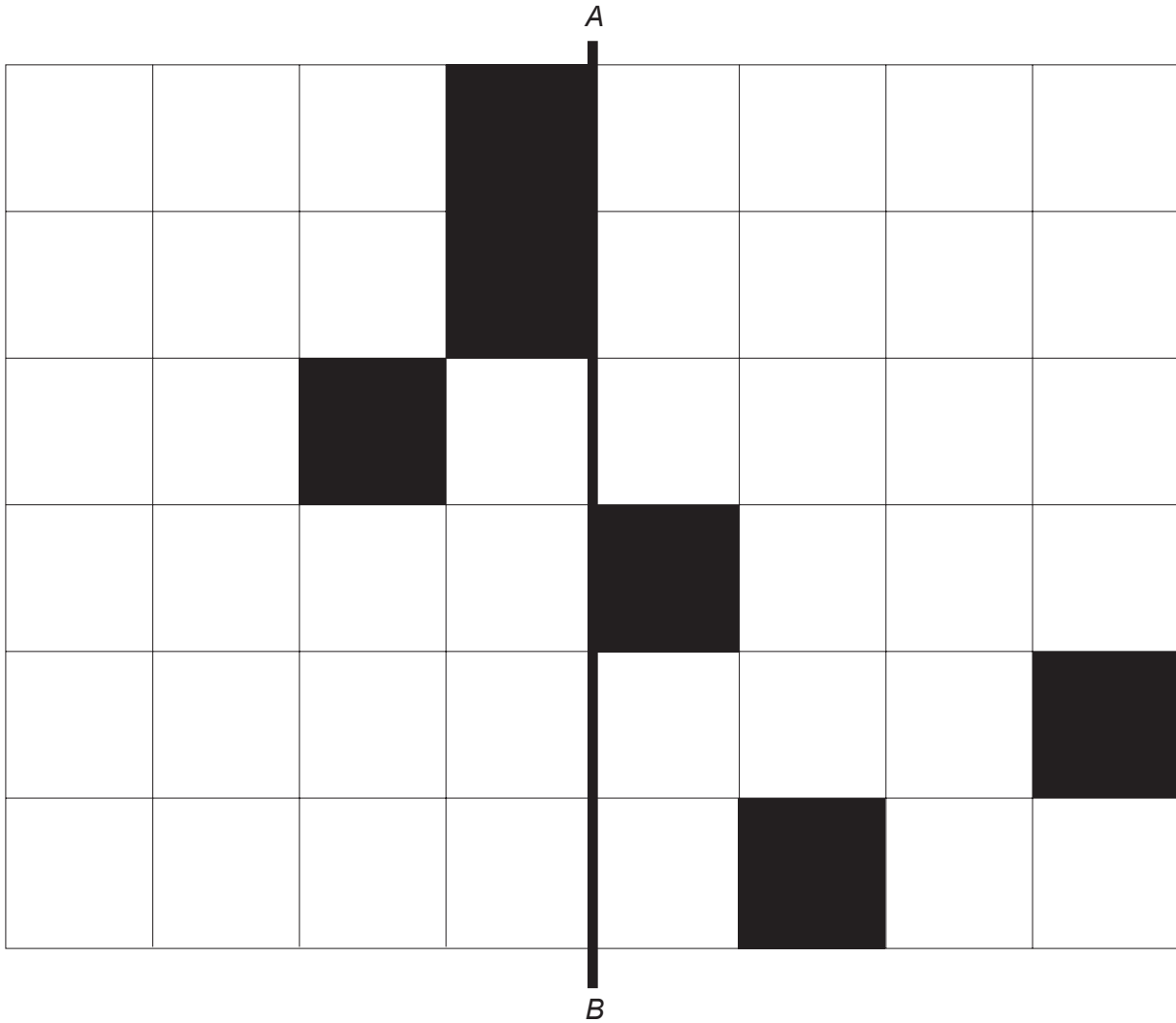
		×	2	3	=	2	3	0
--	--	---	---	---	---	---	---	---

.....

.....

.....

3. Fill in the smallest number of squares in order to make the following diagram symmetrical about the line AB . [2]



4. (a) Select the special name for the straight line shown in each of the following diagrams.
Write your answer in the space by each diagram.

[3]

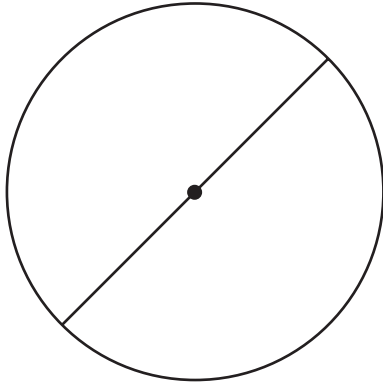
radius

chord

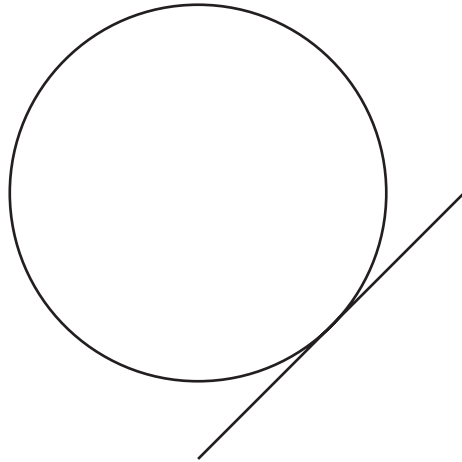
diameter

tangent

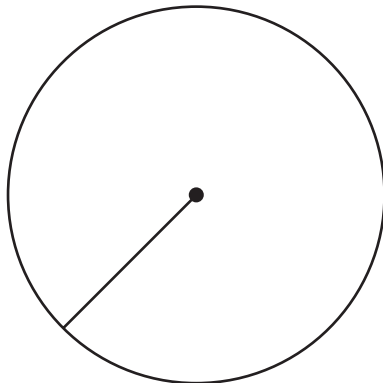
circumference



.....

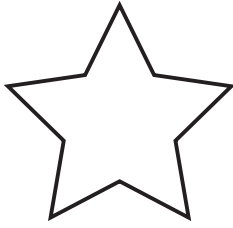
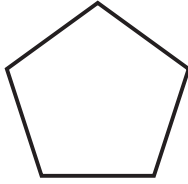
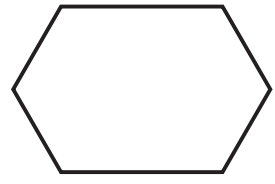
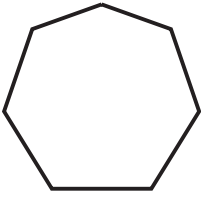
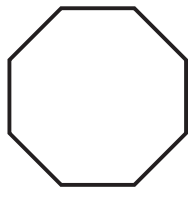
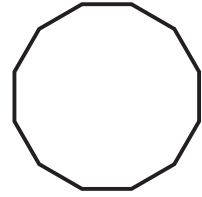
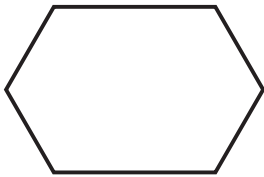
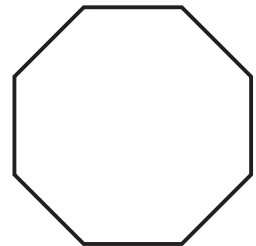


.....



.....

(b)

**A****B****C****D****E****F****G****H****I**

Use the diagrams above to identify and write down:

[3]

- a pair of congruent shapes,

.....

- a pair of shapes that are similar but not congruent,

.....

- another pair of shapes that are similar but not congruent.

.....

5. A shape is made from two identical rectangles each measuring 10 cm by 2 cm and two identical rectangles each measuring 8 cm by 2 cm. They connect to enclose a shaded region, as shown in the diagram below.

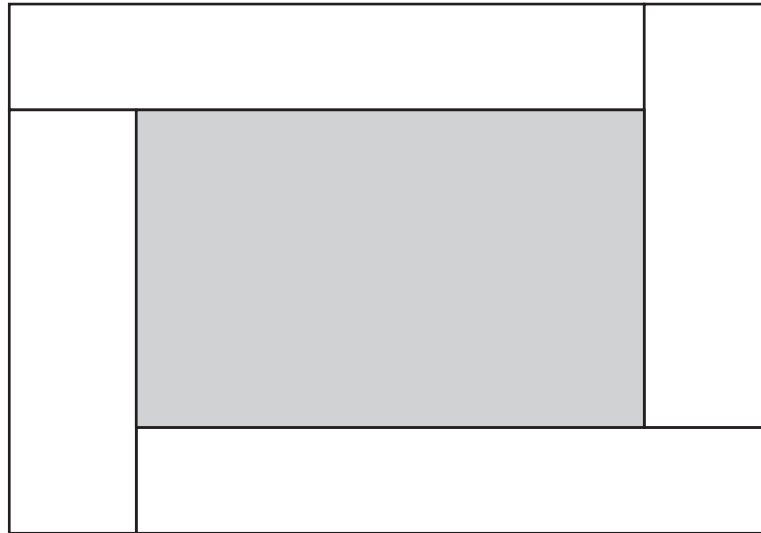


Diagram not drawn to scale

- (a) How many lines of symmetry are there in the shape? [1]

.....

- (b) What is the order of rotational symmetry of the shape? [1]

.....

- (c) Calculate the outer perimeter of the shape. [2]

.....

.....

.....

.....

.....

- (d) Calculate the area of the **shaded** region. You must show the units of your answer. [4]

.....

.....

.....

.....

6. You will be assessed on the quality of your written communication in this question.



Small pot of
daffodils

£1.20



Large pot of
daffodils



Marjorie spent £20 on daffodils and received 50p change.
She bought 10 small pots of daffodils.
The large pots of daffodils were 25% more expensive than the small pots of daffodils.
How many large pots of daffodils did she buy?
You must show all your working.

[8]

.....

.....

.....

.....

.....

.....

.....

.....

.....

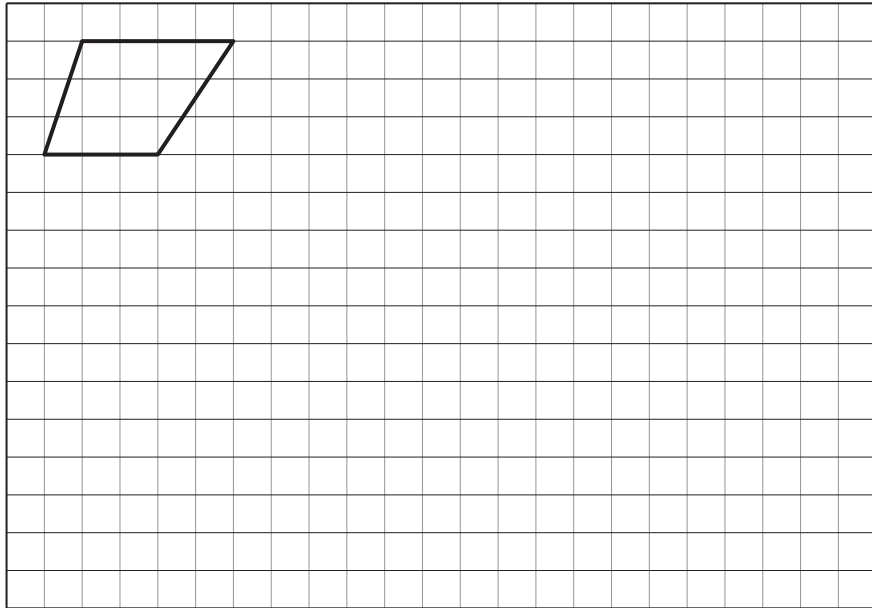
.....

.....

4364
010009

7. (a) Enlarge the following shape by a scale factor of 3.

[2]



(b) The volume of a large cube is 216 cm^3 .
It is made up of smaller cubes measuring 2 cm by 2 cm by 2 cm.

How many of the smaller cubes are used to make the large cube?

[3]

.....

.....

.....

.....

.....

.....

.....

.....

8. (a) Find the value of $53 \cdot 2^3 + \sqrt{9671 \cdot 3}$. Write your answer correct to 2 significant figures. [2]

.....

.....

- (b) Find the value of $\frac{2}{0.6^2}$. Write your answer correct to 1 decimal place. [2]

.....

.....

- (c) Which of the fractions $\frac{3}{8}$, $\frac{5}{16}$ or $\frac{9}{64}$ is nearest to $\frac{1}{4}$?
You must show all your working. [3]

.....

.....

.....

.....

.....

9. (a) Solve $a - 9 = 17$.

[1]

.....

.....

(b) Solve $\frac{x}{8} = 16$.

[1]

.....

.....

(c) Solve $3y + 14 = 41$.

[2]

.....

.....

.....

.....

(d) Solve the inequality $2x + 3 > 35$.

[2]

.....

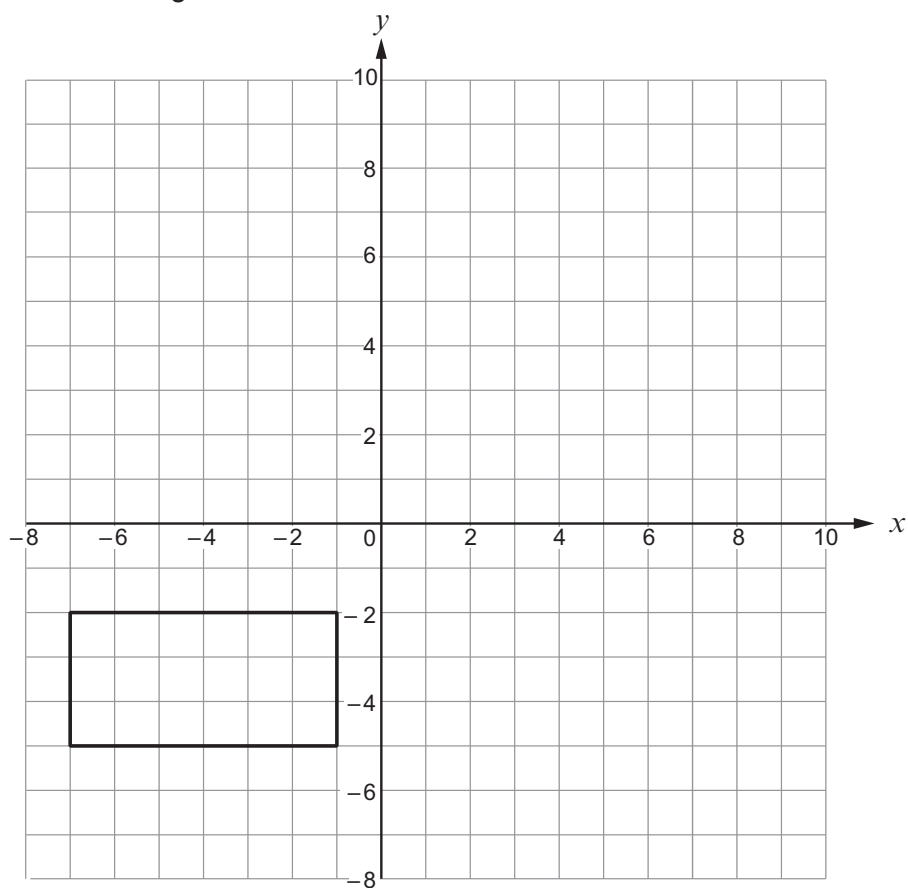
.....

.....

.....

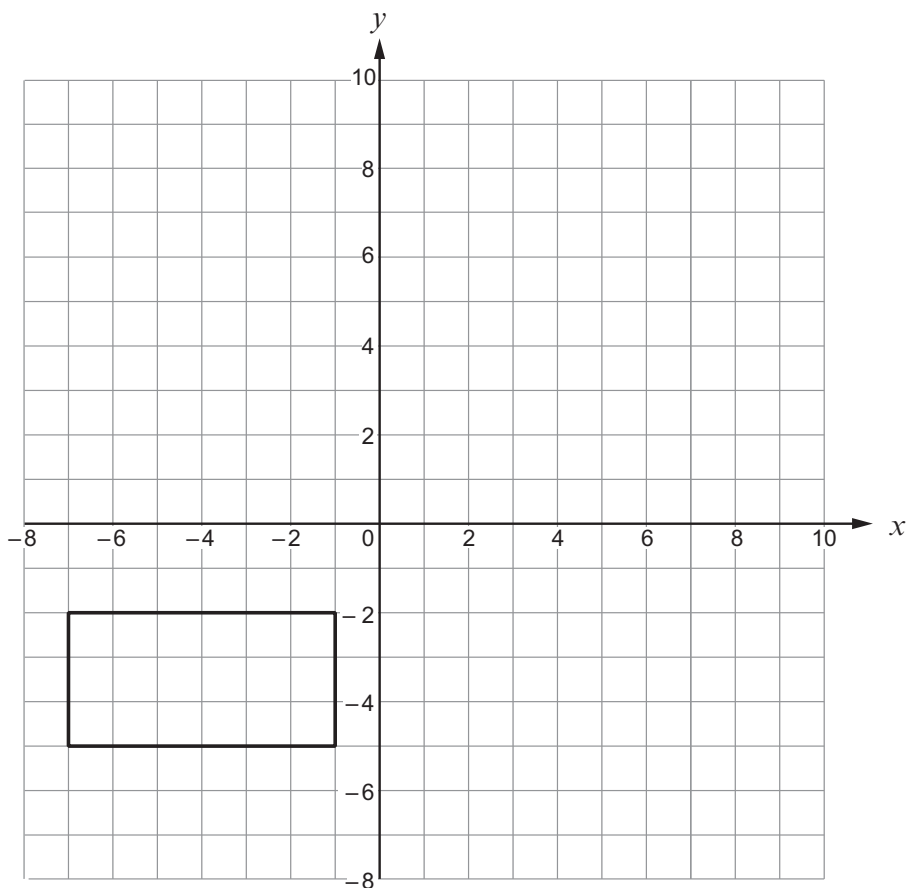
11. (a) Reflect the rectangle shown below in the line $x = 1$.

[2] Examiner only



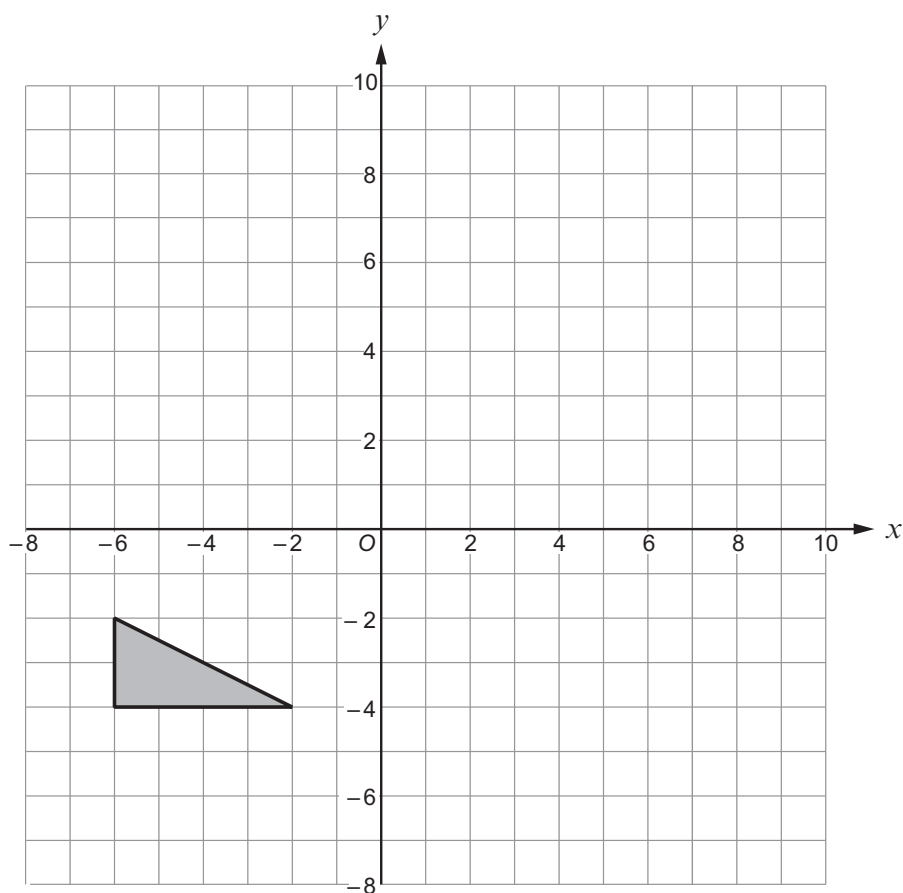
- (b) Translate the rectangle shown below by $\begin{pmatrix} 8 \\ 5 \end{pmatrix}$.

[1]



(c) Rotate the triangle through 90° anticlockwise about O .

[2] Examiners only



12.

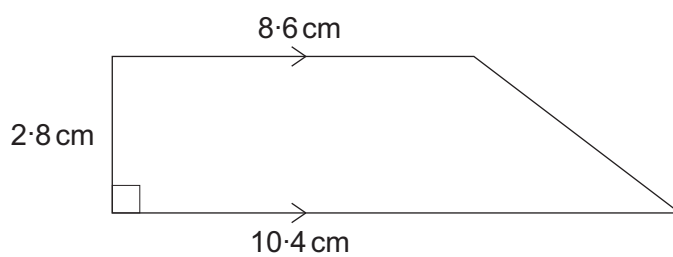


Diagram not drawn to scale

Calculate the area of the trapezium.

[2]

.....

.....

.....

.....

.....

.....

13. Agnes and Bryn both buy identical pizzas to share with friends.



Agnes gives Carwyn $\frac{2}{5}$ of her pizza.

Bryn shares his pizza in the ratio 1 : 2 : 3 : 4 and gives Dafydd the largest piece.

Does Carwyn have:

- the same size piece of pizza as Dafydd, or
- a larger piece of pizza than Dafydd, or
- a smaller piece of pizza than Dafydd?

You must explain your answer and show all your working.

[3]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

14. The shape below shows a semi circle attached to a rectangle.

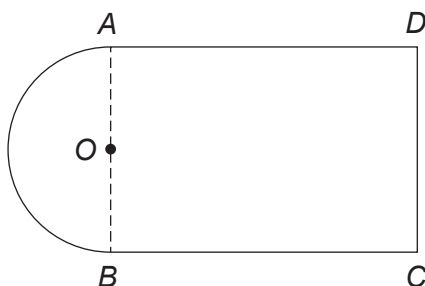


Diagram not drawn to scale

The radius of the semi circle is 6.1 cm and the length $BC = 16.7$ cm.
Calculate the area of the shape.

[6]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

15.

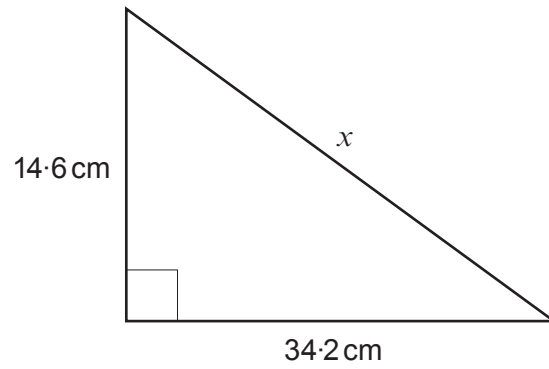


Diagram not drawn to scale

Calculate the length x .

[3]

.....

.....

.....

.....

.....

.....

END OF PAPER

BLANK PAGE