

|             |               |                  |
|-------------|---------------|------------------|
| Surname     | Centre Number | Candidate Number |
| Other Names |               | 0                |



## GCSE LINKED PAIR PILOT

4364/01



W15-4364-01

## METHODS IN MATHEMATICS

### UNIT 2: Methods (Calculator)

### FOUNDATION TIER

A.M. MONDAY, 19 January 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  $\pi$  as 3.14 or use the  $\pi$  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.

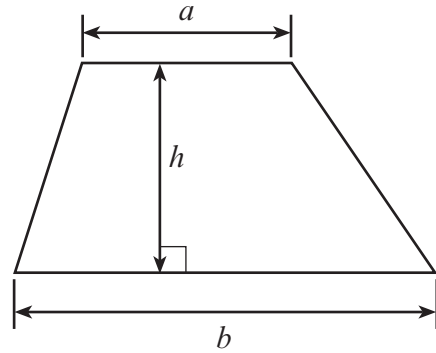
You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question 7.

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

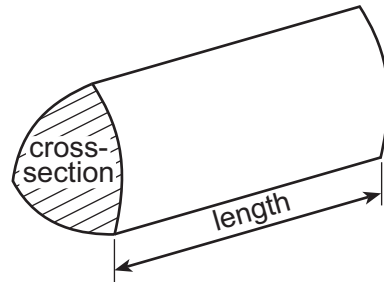
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**Formula List**

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

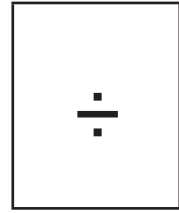
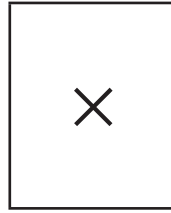
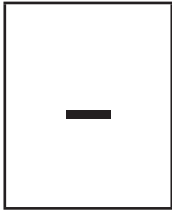


**Volume of prism** = area of cross-section  $\times$  length



1. Using the signs below, fill in the missing blanks.

[6]



$$23 \quad \square \quad 17 = 40$$

$$100 \quad \square \quad 25 = 75$$

$$36 \quad \square \quad 3 = 12$$

$$4 \quad \square \quad 4 = 16$$

$$2 \quad \square \quad 5 \quad \square \quad 3 = 13$$

$$10 \quad \square \quad 2 \quad \square \quad 5 = 0$$

2. (a) (i) Write down the **smallest** four-digit number that can be made using all the digits 9, 7, 4 and 6. [1]

.....

- (ii) Write down the **largest odd** four-digit number that can be made using all the digits 9, 7, 4 and 6. [1]

.....

- (b) Circle **three** of the following that have the same value as  $\frac{2}{10}$ . [3]

**20%**

**0.002**

**0.02**

**5**

**0.2**

**2%**

**$\frac{1}{5}$**

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

.....

- (ii) Write down the value of a quarter of a thousand. [1]

.....

- (d) Circle the numbers that are divisible by **both 3 and 4**. [2]

**10**

**11**

**12**

**13**

**14**

**15**

**16**

**17**

**18**

**19**

**20**

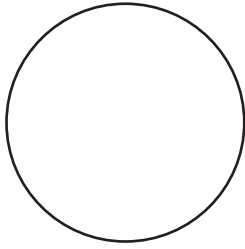
**21**

**22**

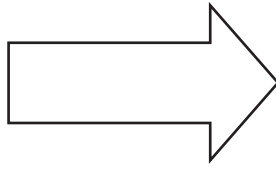
**23**

**24**

3.



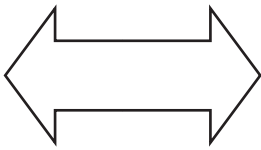
A



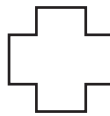
B



C



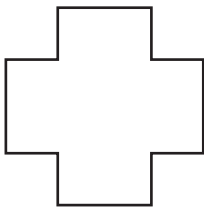
D



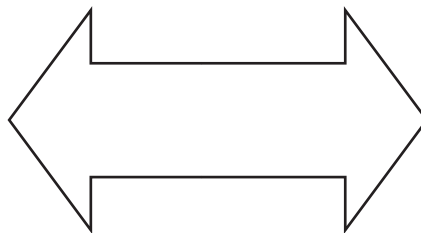
E



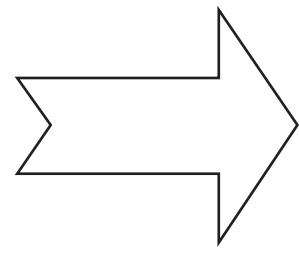
F



G



H



I

Use the diagrams above to identify and write down

[2]

- a pair of similar shapes

.....

- another pair of shapes that are similar.

.....

4. (a) 20 pencils cost £3.60.  
How much do 4 pencils cost?

[4]

.....

.....

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.....

.....

(b) Find 53% of 4.2.

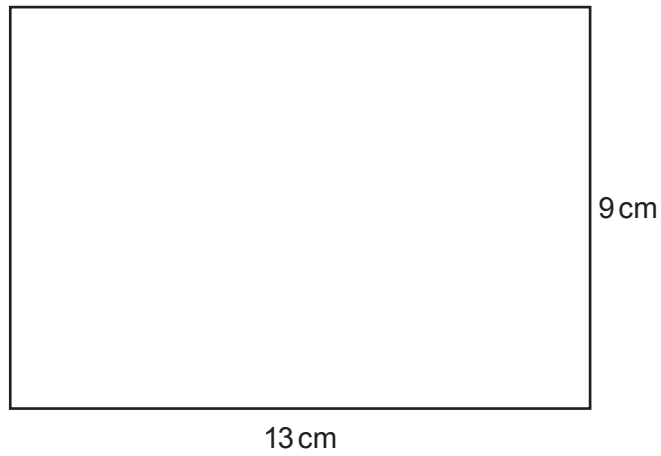
[2]

.....

.....

5. (a) Calculate the area of the following rectangle.

[2]



*Diagram not drawn to scale*

.....

.....

.....

.....

(b) The perimeter of another rectangle is 36 cm.  
The length of the rectangle is twice as long as its width.  
Calculate the length and width of the rectangle.

[3]

.....

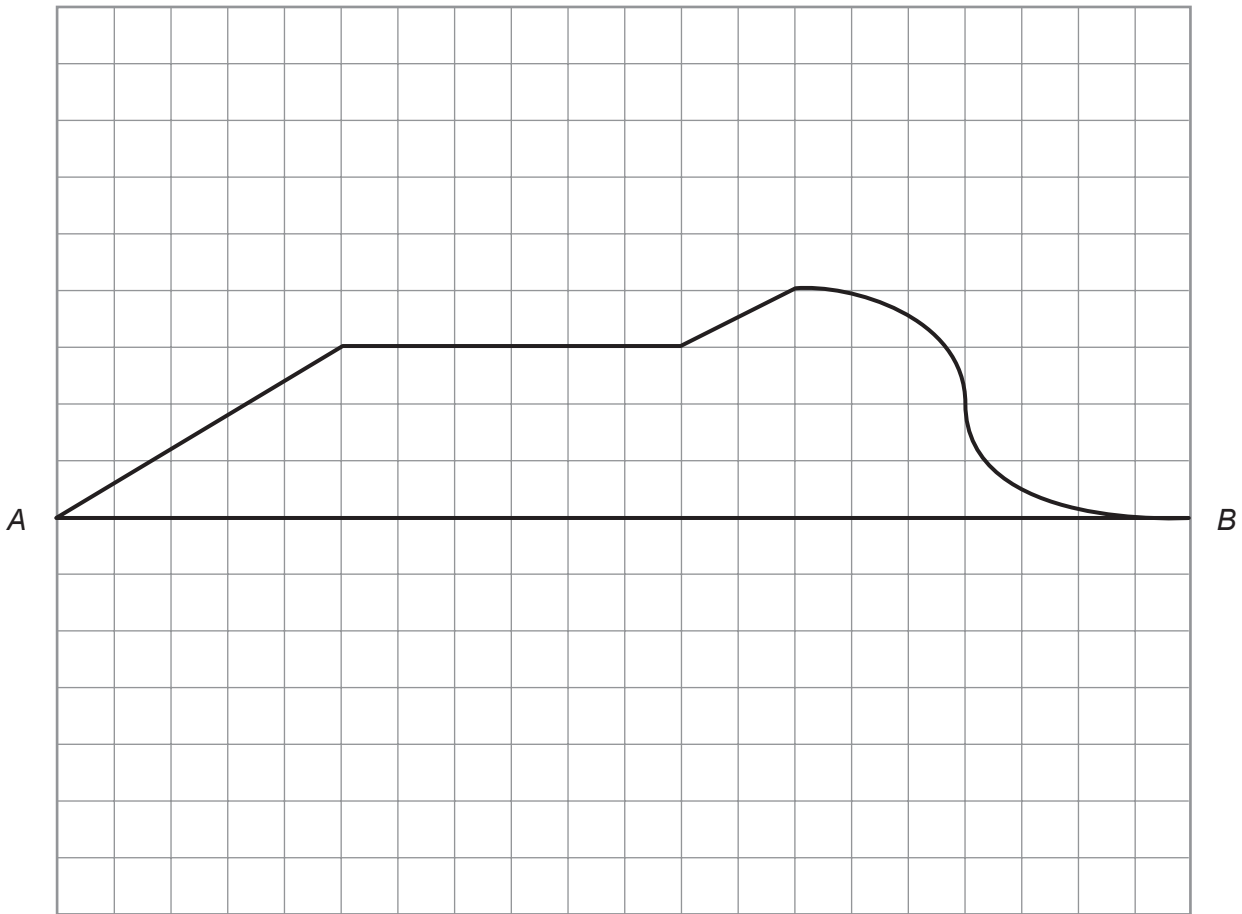
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.....

.....

Length = ..... cm      Width = ..... cm

6. (a) Complete the following diagram so that  $AB$  is a line of symmetry. [2]



(b) Write down the order of rotational symmetry of the shapes below. [2]



Order of rotational symmetry = .....

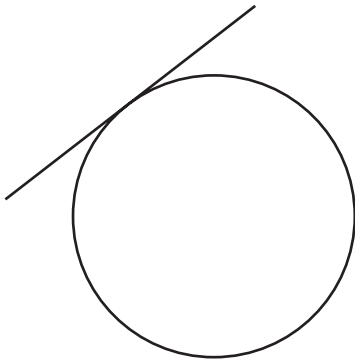


Order of rotational symmetry = .....



(c) Select the special name for the straight line shown in the following diagram.

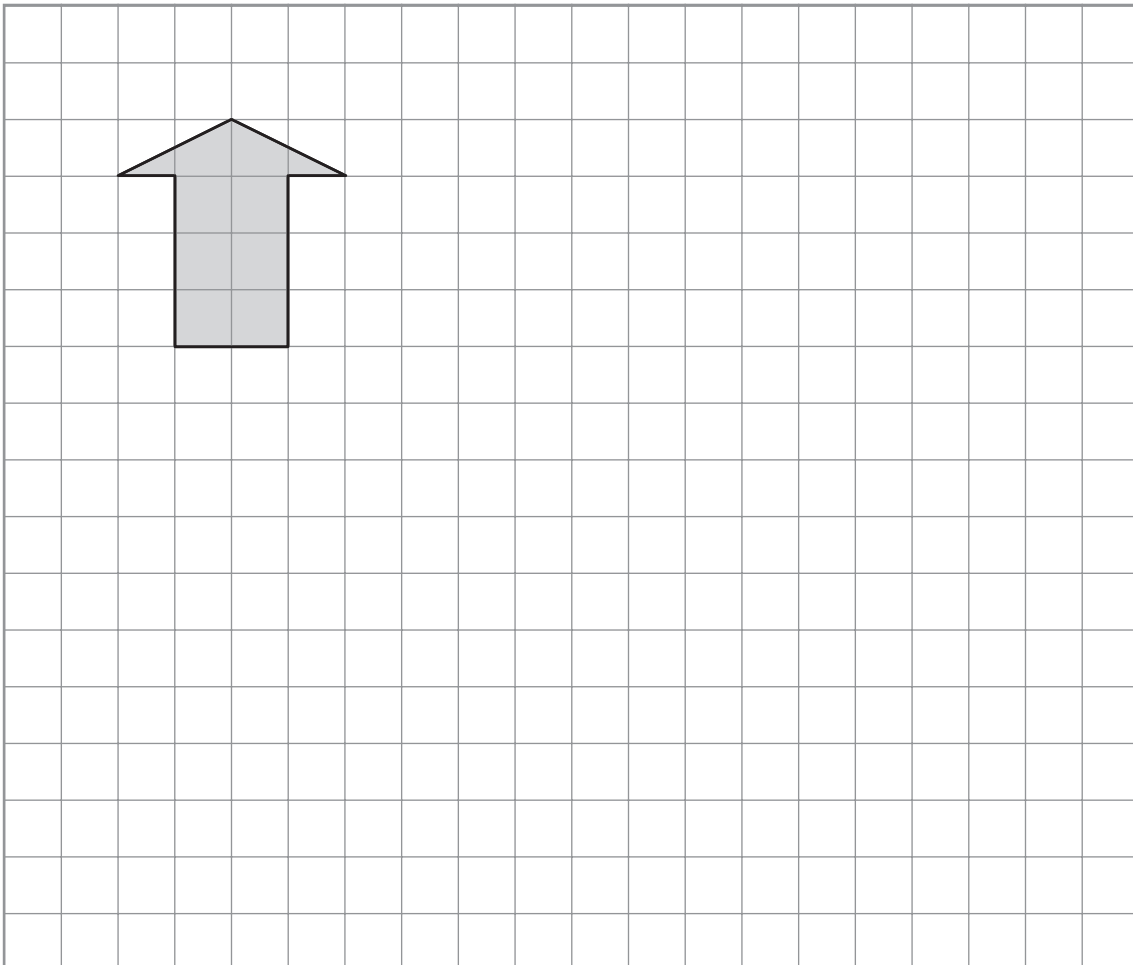
[1]

Examiner  
only**radius****chord****diameter****tangent****circumference**

.....

(d) Enlarge the following shape by a scale factor of 2.

[2]





8. (a) Solve  $\frac{x}{7} = 7$ . [1]

.....  
.....

(b) Solve  $5y - 6 = 49$ . [2]

.....  
.....

(c) (i) Find the values of  $x$  and  $y$  when  $4x = 20$  and  $x + y = 4$ . [2]

.....  
.....

(ii) Use your answers to find the value of  $2x + 3y$ . [2]

.....  
.....

9. Find the value of  $5 \cdot 12^3 - \sqrt{425 \cdot 1}$ . Write down your answer to 1 decimal place. [2]

.....  
.....

10. Use the following clues to find the missing **whole** number.

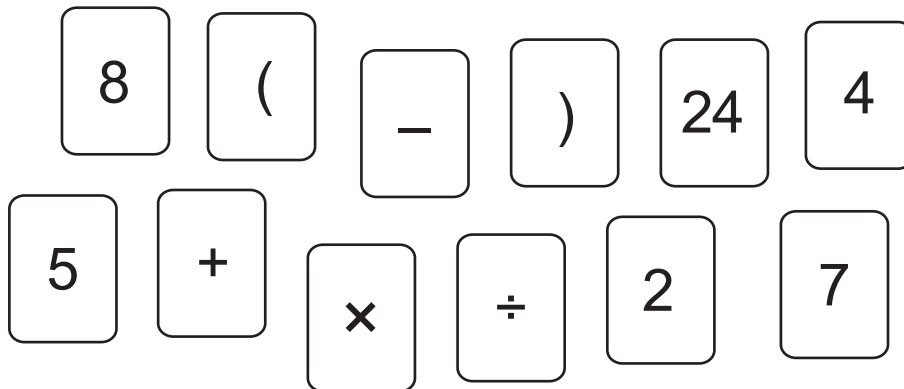
- The number is between 80 and 100.
- The number is less than  $\frac{1}{3}$  of 282.
- The number is greater than 20% of 450.
- The number is not odd.

[4]

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

The missing whole number is .....

11.



Use only cards from the selection shown above to create calculations with answers of 60,  $-7$  and 21.

Remember:

- there are no other cards available to use
- a card may be used once only in each calculation
- a complete selection of these cards is available for each calculation.

[3]

For example, to create a calculation with the answer 13,

$$\boxed{8} \quad \boxed{+} \quad \boxed{5} = 13.$$

(a) = 60

(b) =  $-7$

(c) = 21

12. (a) The volume of a cuboid is  $385 \text{ cm}^3$ .  
The height of the cuboid is 11 cm.  
The length and the width of the cuboid are both whole numbers of centimetres.  
Calculate a possible length and width of this cuboid.  
You must show all your working.

[3]

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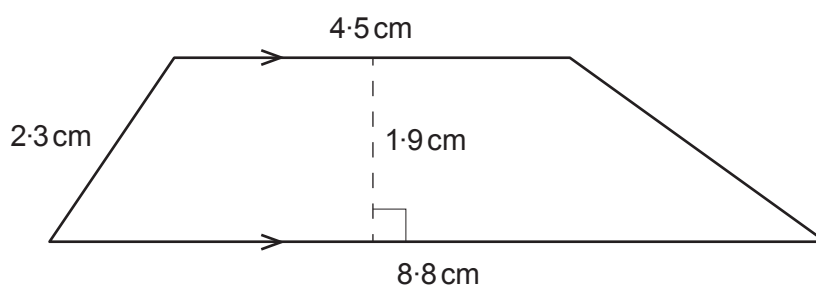
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(b)

*Diagram not drawn to scale*

- Calculate the area of the trapezium shown above, giving the units for your answer. [3]

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.....

.....

- (c) Calculate the area of a circle with radius 8 cm.

[2]

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.....

.....

13. (a) Solve  $\frac{x+17}{3} = 5$ .

[2]

.....

.....

.....

.....

(b) Solve the inequality  $5x - 22 < 188$ .

[2]

.....

.....

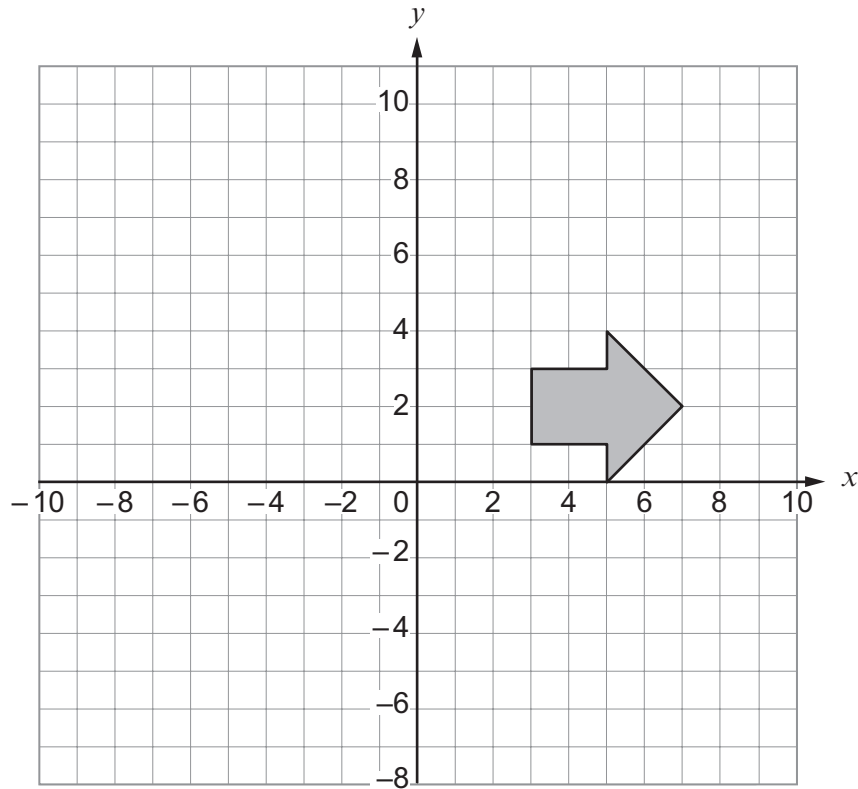
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14. (a) Reflect the shape in the  $x$ -axis.

[2]



(b) Rotate the shape through  $90^\circ$  anticlockwise about the point  $(1, -1)$ .

[2]

