



Class
Maths

PRACTICE PAPER FOR

AQA Paper 3F (June 2023)

----- Disclaimer -----

In 2022 I wrote a series of predicted papers that in many cases reflected the real exam paper very well. This was due to the exam boards providing advance information on the topics that were going to be in each paper. This information is no longer provided so “predicting” a paper is not possible. Nobody can know what topics and types of questions will come up in each paper, apart from the few examiners that write them.

This paper has been created based on the **most common** paper 2/3 topics from previous years as well as careful analysis of the topics that have already appeared in paper 1/2. The paper should be excellent at helping students revise for exams, however should not be relied upon as the basis for revision. The topics from this paper may well appear in the real exams, however there is absolutely no guarantee of this for the reasons previously mentioned. Some topics may appear, some may not.

Ultimately the best way to prepare for the exams is to **revise all topics**.



@1stclassmaths



Do not write
outside the
box

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

1 (a) Convert 6 metres into centimetres. [1 mark]

Answer _____ cm

1 (b) Convert 400 grams into kilograms. [1 mark]

Answer _____ kg

2 Write down a fraction equivalent to $\frac{1}{3}$ [1 mark]

Answer _____

3 Write the following numbers in order. Start with the smallest. [2 marks]

0.24 0.42 0.02 0.2

Answer _____



Do not write outside the box

4 Here are some symbols



Write one of these symbols in each box below to make the statements correct. One has been done for you. **[3 marks]**

$\frac{1}{2}$

50%

0.07

70%

$\frac{1}{4}$

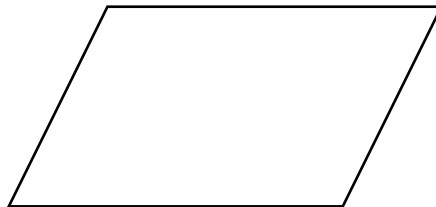
0.4

90%

0.9

5 Here is a parallelogram.

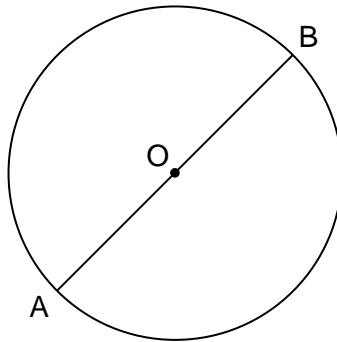
Write down the order of rotational symmetry of a parallelogram. **[1 mark]**



Answer _____

Turn over ►

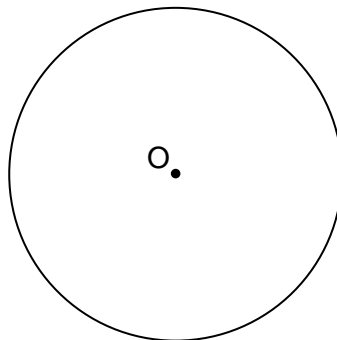
- 6 Here is a circle with centre O.
A and B are points on the circle.



- 6 (a) Write down the mathematical name for the line AB. [1 mark]

Answer _____

- 6 (b) Draw a tangent onto the circle below. [1 mark]





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outside the
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7 Here are some numbers

8 2 9 12 13 9

Show that the mean of the numbers is less than the mode of the numbers.

[3 marks]

8 Francis thinks of a whole number.
The square root of his number is 16.

Work out the number that Francis thinks of.

[2 marks]

Answer _____



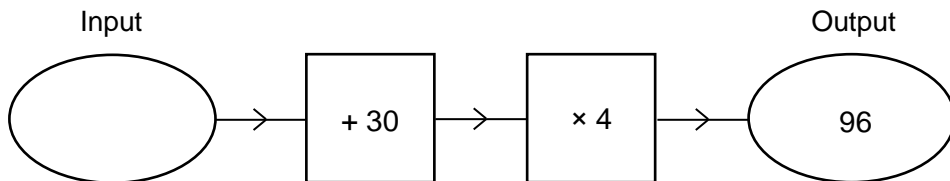
Turn over ►

9 Complete the bank statement

[3 marks]

| Date | Description | Credit (£) | Debit (£) | Balance (£) |
|----------|------------------|------------|-----------|-------------|
| 01/06/23 | Starting Balance | | | _____ |
| 09/06/23 | Gas Bill | | 106.41 | 322.09 |
| 12/06/23 | Salary | 1527.15 | | _____ |
| 13/06/23 | Phone Bill | | _____ | 1819.24 |

10 Here is a number machine.



Work out the input.

[2 marks]

Answer _____



Do not write
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11 (a) Solve $\frac{w}{4} = 40$

[1 mark]

Answer _____

11 (b) Rearrange $x - b = a$ to make x the subject.

[1 mark]

Answer _____

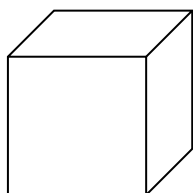
11 (c) Solve $2c - 8 > 9$

[2 marks]

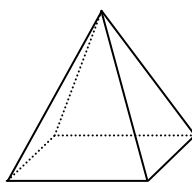
Answer _____

Turn over ►

12 Here is a cube and a square-based pyramid.



24 m

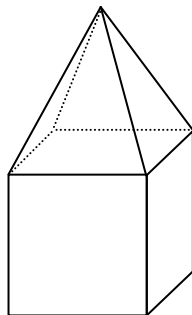


24 m

12 (a) Work out the total surface area of the cube. [2 marks]

Answer _____ m²

12 (b) The square-based pyramid is placed on top of the cube for the new shape below.



Complete the table below for the **new shape**. [3 marks]

| | |
|--------------------|--|
| Number of Faces | |
| Number of Edges | |
| Number of Vertices | |

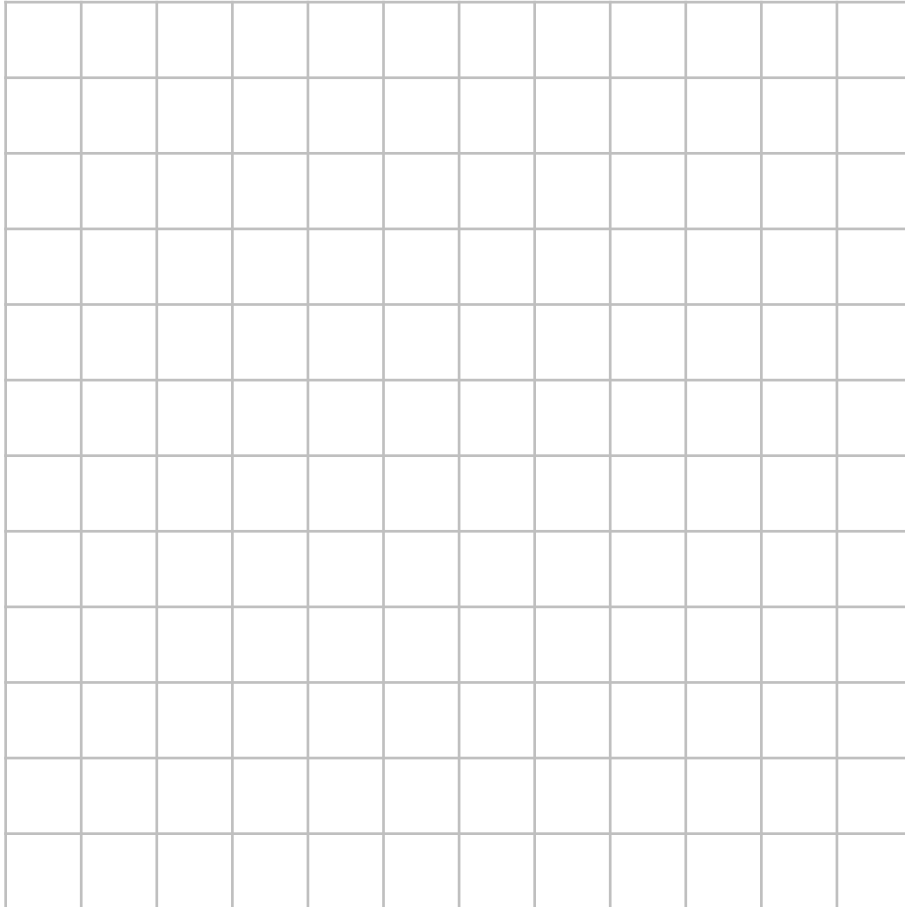


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12 (c) On the centimetre grid below draw a plan view of the square-based pyramid

Use a scale of 1 centimetre represents 3 metres

[2 marks]



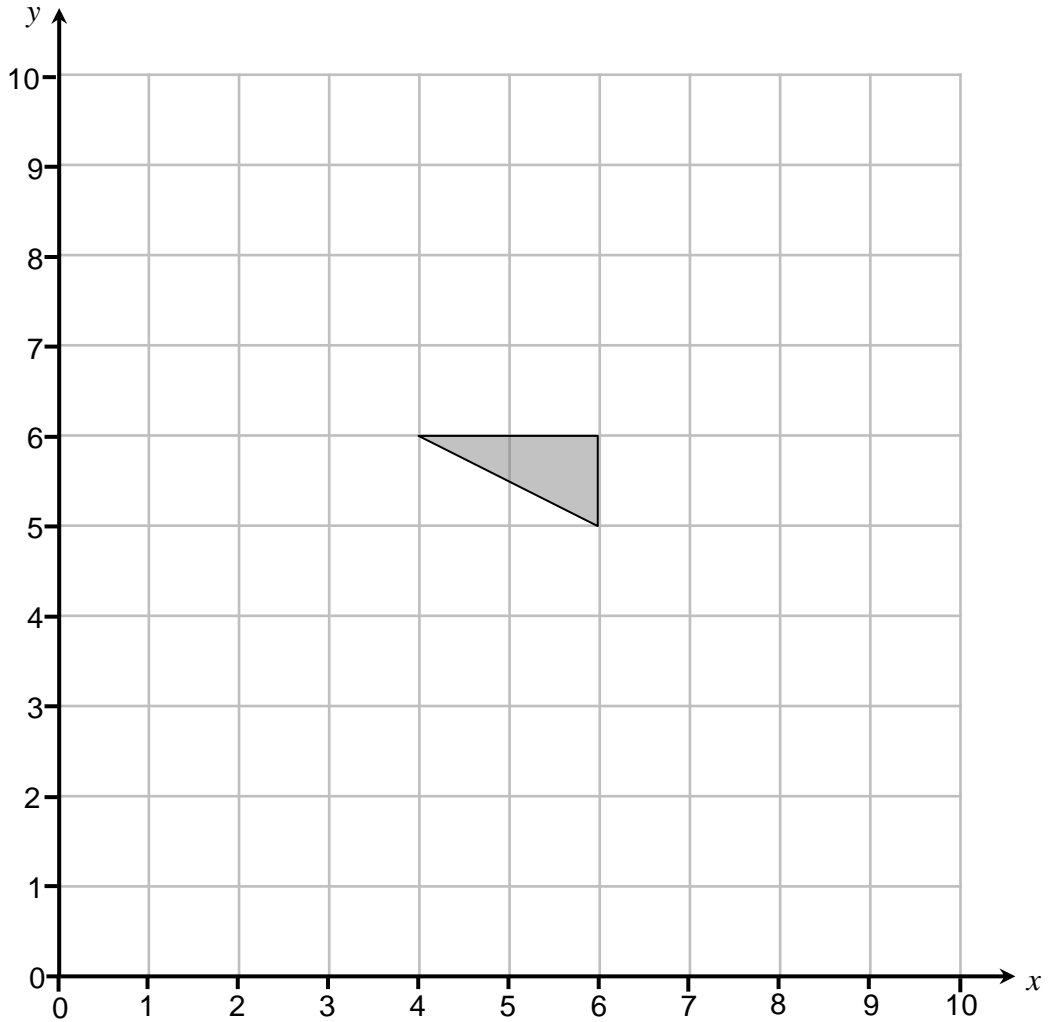
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13 (a) Rotate the triangle 90° anticlockwise about the point $(5, 4)$

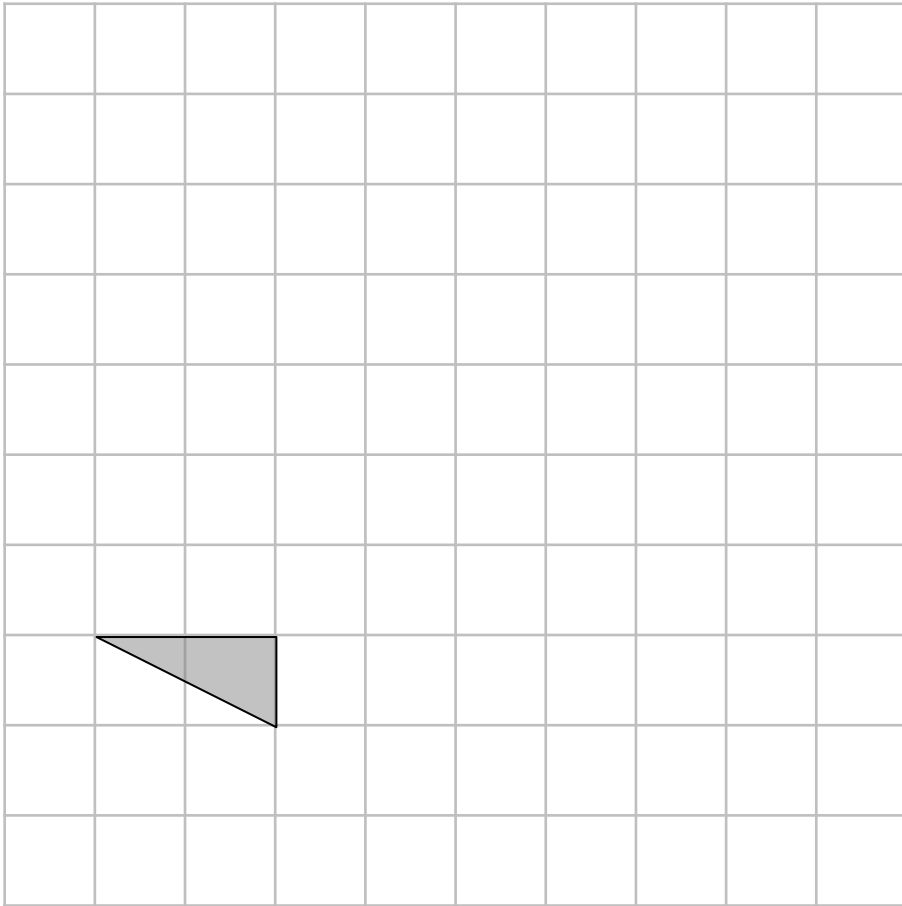
[2 marks]





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13 (b) On the grid, draw an enlargement of the triangle with scale factor 3. [2 marks]



Turn over ►



14 (a) A bag contains only red, blue or green counters.

The probability of selecting a red counter is 0.7

The probability of selecting a blue counter is the same as the probability of selecting a green counter.

Work out her probability of selecting a blue counter.

[2 marks]

Answer _____

14 (b) A counter is taken from the bag at random.

The colour of the counter is noted and then it is replaced into the bag.

This is repeated 200 times.

Work out an estimate for the number of times a red counter is taken from the bag.

[2 marks]

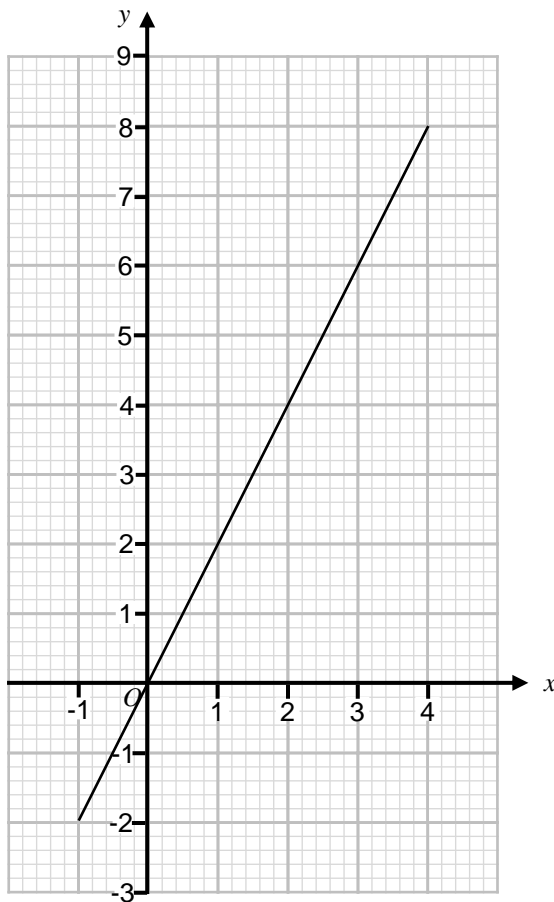
Answer _____



15 The graph of $y = 2x$ for x values from -1 to 4 is shown on the grid.

15 (a) On the grid, draw the graph of $y = 3 - x$ for x values from -1 to 4

[3 marks]



15 (b) Use your graph to solve $3 - x = 2x$

[1 mark]

$x =$ _____



16 (a) Use your calculator to work out the value of $\frac{29.79^3}{0.49}$ [1 mark]
Write down your full calculator display.

Answer _____

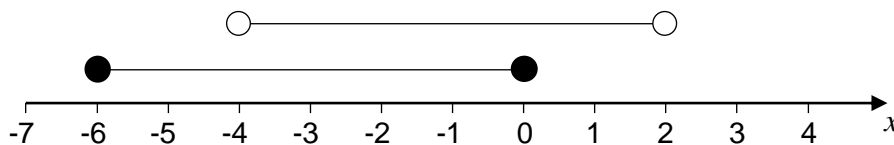
16 (b) Use approximations to 1 significant figure to check if your answer to part (a) is sensible. [3 marks]

Tick a box

Sensible

Not sensible

17 Two inequalities are represented on the number line below.



Write down all of the integers that satisfy both inequalities. [2 marks]

Answer _____



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18 Work out the highest common factor (HCF) of 63 and 105 **[2 marks]**

Answer _____

19 Here is some information about age of 25 cars for sale at a car dealership.

| Age of car (years) | Number of cars |
|--------------------|----------------|
| 0 | 12 |
| 1 | 4 |
| 2 | 4 |
| 3 | 4 |
| 4 | 1 |

19 (a) Write down the modal age of the cars. **[1 mark]**

Answer _____

19 (b) Work out the median age of the cars. **[2 marks]**

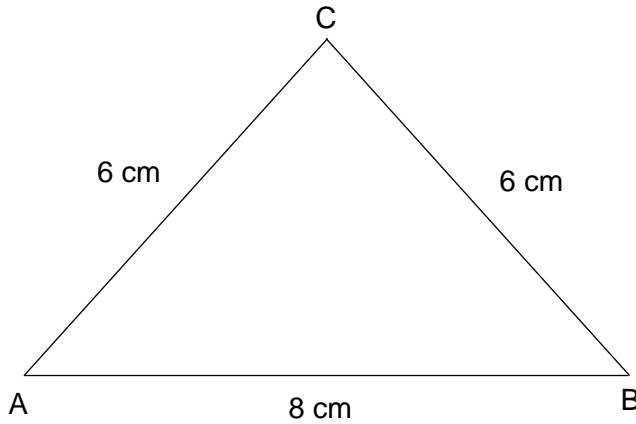
Answer _____

Turn over ►

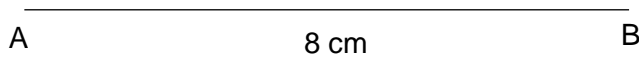
20

ABC is an isosceles triangle.
The perimeter of triangle ABC is 20 cm
 $AB = 8$ cm

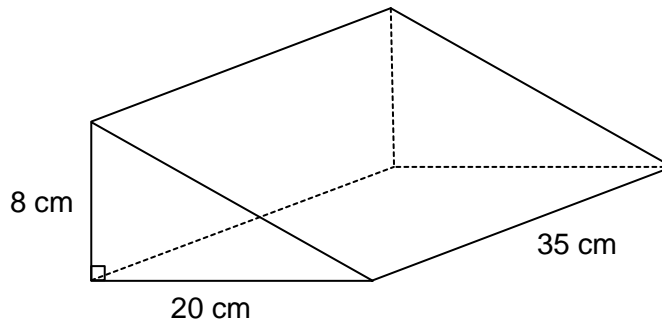
Rhia constructs a possible triangle for ABC.
Rhia's triangle is shown below.



Using ruler and compasses only, construct another possible triangle ABC.
Your triangle **must** be different to Rhia's.
The line AB has been drawn for you.

[3 marks]

- 21 The triangular prism below is made from metal.
The metal has a density of 4.5 g/cm^3 (to 1 decimal place).



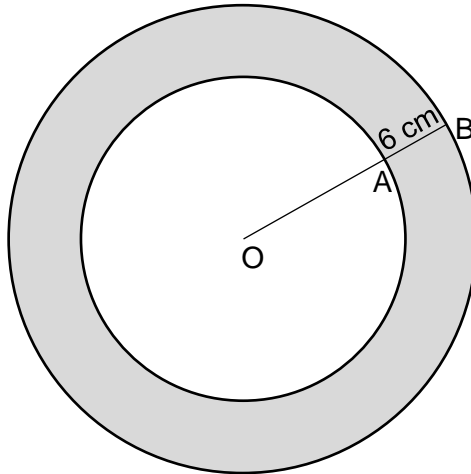
- 21 (a) Complete the error interval for the density of the metal. [2 marks]

_____ $\text{g/cm}^3 \leq \text{density} <$ _____ g/cm^3

- 21 (b) Assume instead that the density of the metal is **exactly** 4.5 g/cm^3 .
Work out the mass of the prism in grams. [4 marks]

Answer _____ grams

22 Here are two circles with centre O.



The radius of the smaller circle is OA.
The radius of the larger circle is OB.
 $AB = 6\text{ cm}$.

$$OA : AB = 3 : 1$$

Calculate the shaded area.
Give your answer to 1 decimal place.

[4 marks]

Answer _____ cm^2



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outside the
box

23 y is directly proportional to x

Complete the table.

[2 marks]

| | | | |
|-----|----|----|----|
| y | 3 | 30 | |
| x | 30 | | 15 |

24

$$\frac{(7^{100})^2}{7^{-50}} = 7^k$$

Work out the value of k

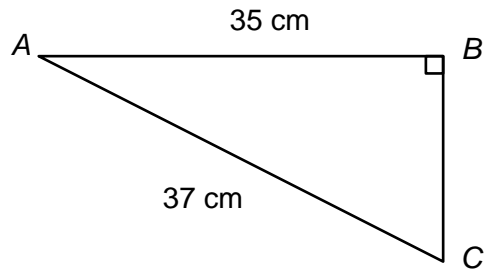
[2 marks]

$$k = \underline{\hspace{10em}}$$

Turn over ►



25 Here is triangle ABC.



25 (a) Work out the length of BC. [2 marks]

Answer _____ cm

25 (b) Work out the size of angle BAC. [2 marks]

Answer _____ °



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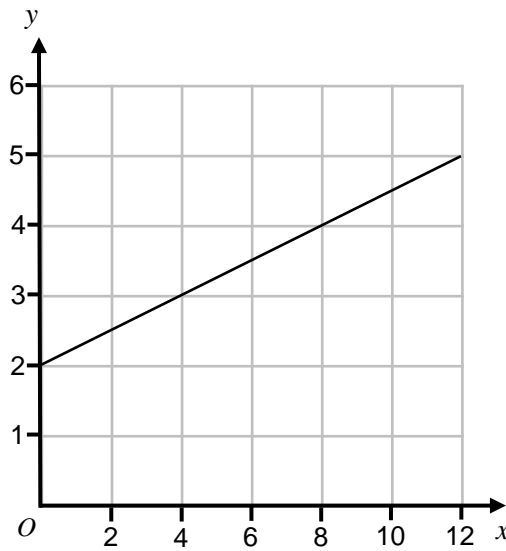
26

Write the number 240×10^5 in standard form.

[2 marks]

Answer _____

27



Work the gradient of the line.

[2 marks]

Answer _____