



## 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



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]**

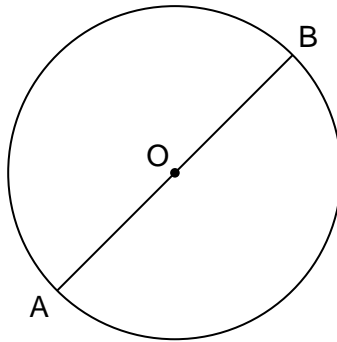


Answer \_\_\_\_\_

Turn over ►



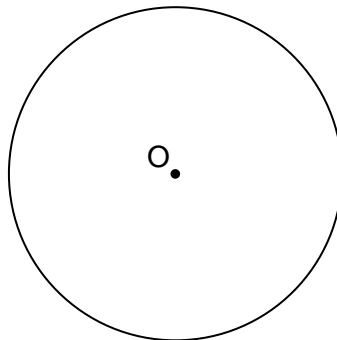
- 6 Here is a circle with centre O.  
A and B are points on the circle.



- 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]





Do not write  
outside the  
box

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 \_\_\_\_\_

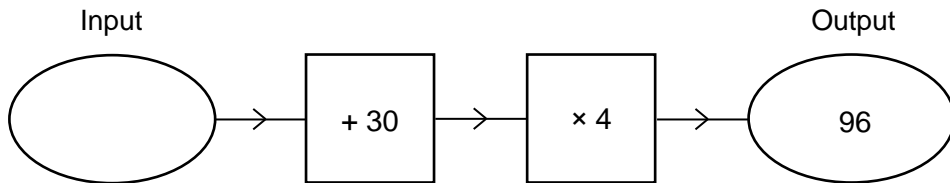
Turn over ►

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  
outside the  
box

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]

---

---

---

---

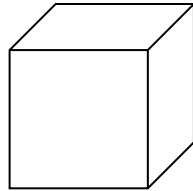
Answer \_\_\_\_\_

Turn over ►

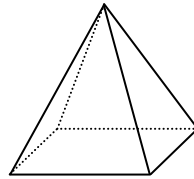


Do not write outside the box

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]

---



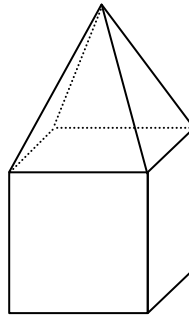
---



---

Answer \_\_\_\_\_ m<sup>2</sup>

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	



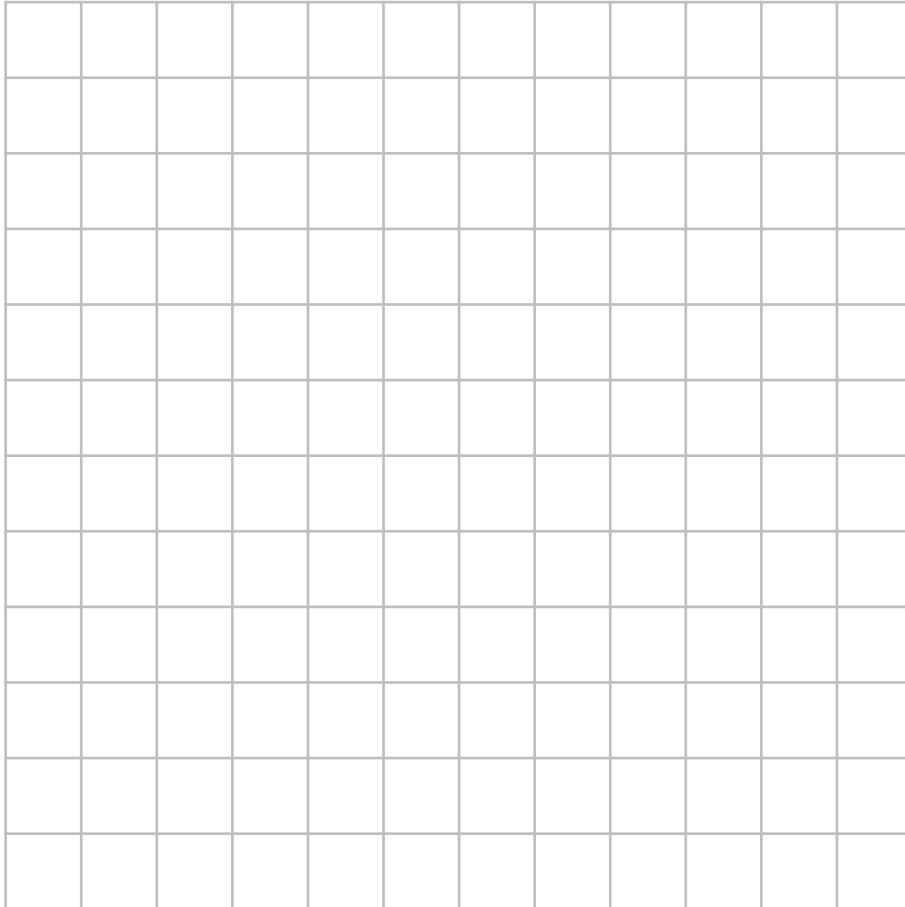


Do not write  
outside the  
box

**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]**



$\frac{7}{7}$

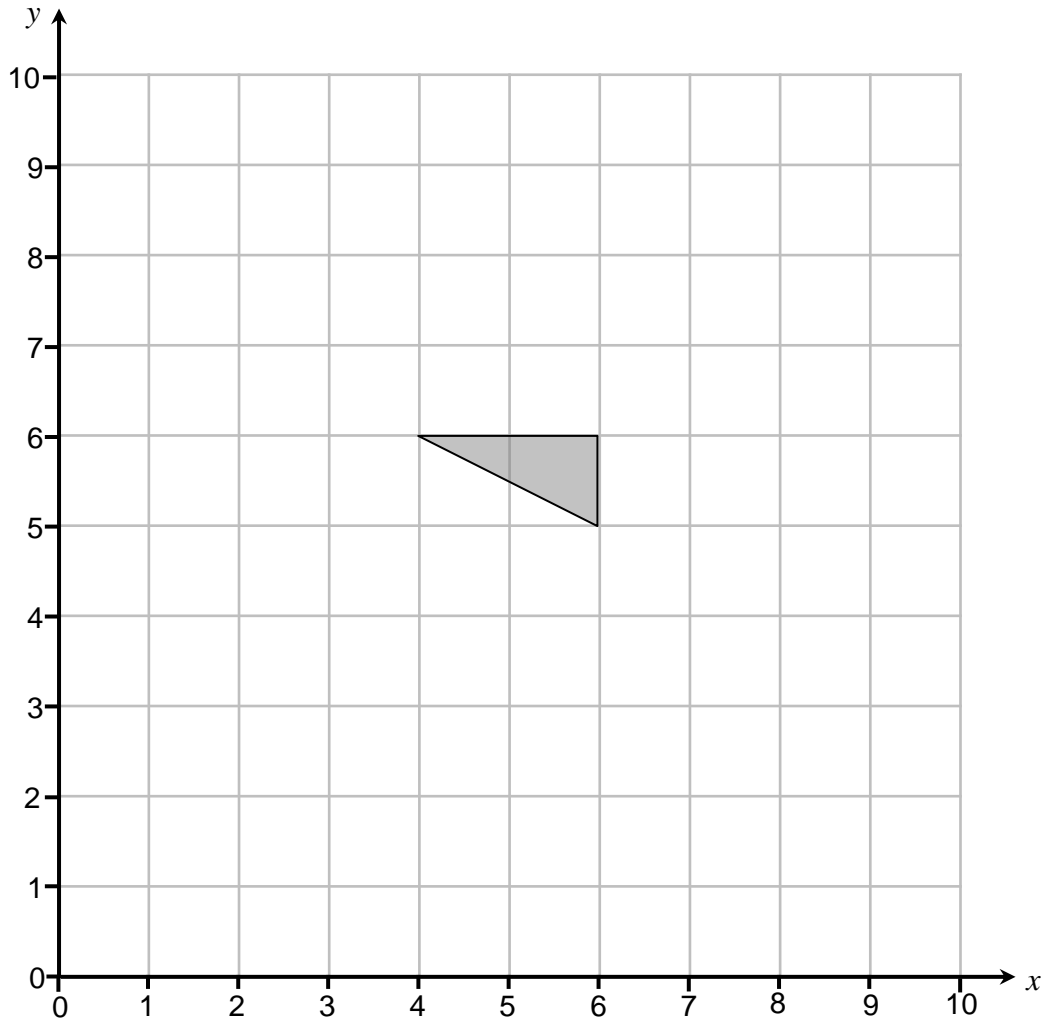
Turn over ►



Do not write  
outside the  
box

13 (a) Rotate the triangle  $90^\circ$  anticlockwise about the point  $(5, 4)$

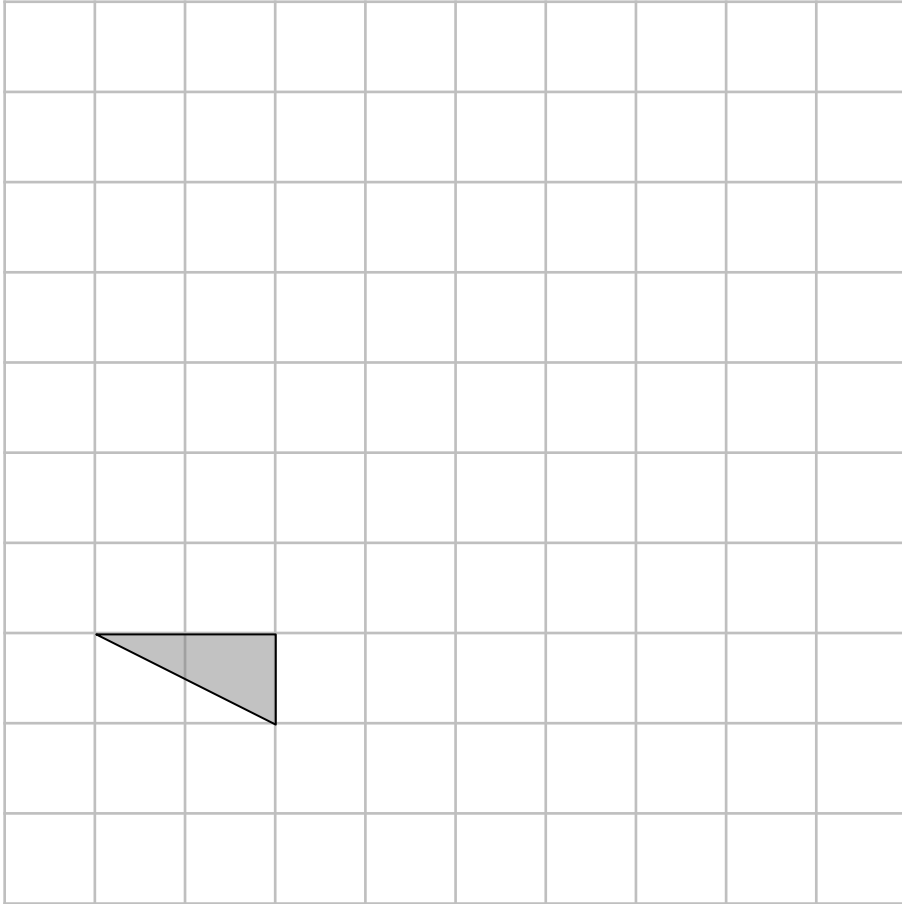
[2 marks]





Do not write  
outside the  
box

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



Turn over ►



Do not write  
outside the  
box

**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 \_\_\_\_\_

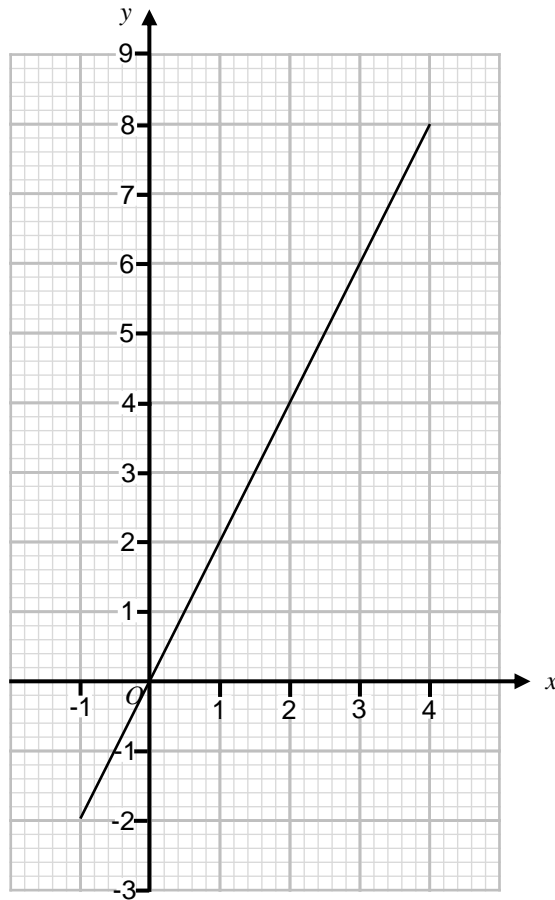


Do not write outside the box

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]

$x =$  \_\_\_\_\_

Turn over ►



**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]

---

---

---

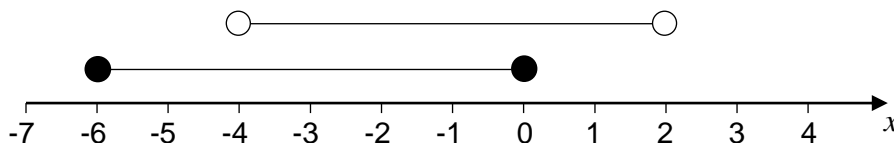
---

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 \_\_\_\_\_



Do not write outside the box

**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]**

---

---

---

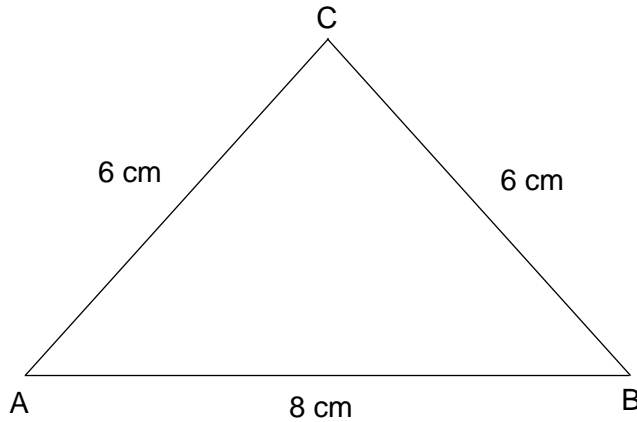
Answer \_\_\_\_\_

Turn over ►

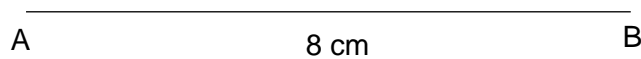
20

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.

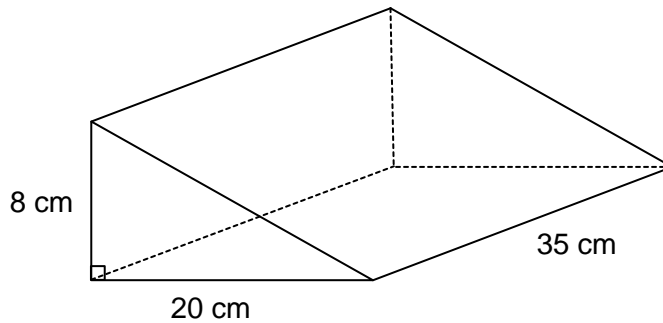


Using ruler and compasses only, construct another possible triangle ABC.  
Your triangle **must** be different to Rhia's.  
The line AB has been drawn for you.

**[3 marks]**



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



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

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

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

---

---

---

---

---

---

---

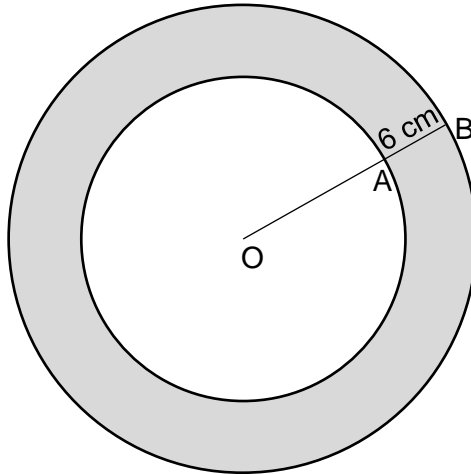
---

Answer \_\_\_\_\_ grams



Do not write outside the box

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 = 6cm.

$$OA : AB = 3 : 1$$

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

[4 marks]

---

---

---

---

---

---

---

---

Answer \_\_\_\_\_ cm<sup>2</sup>



Do not write  
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]

---

---

---

---

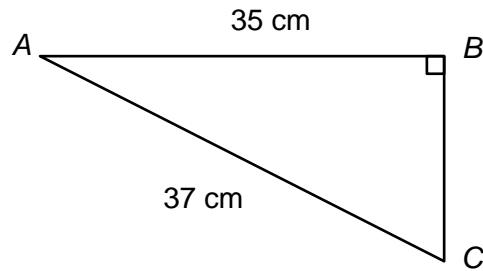
$$k = \underline{\hspace{10em}}$$

Turn over ►



Do not write  
outside the  
box

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 \_\_\_\_\_ °



Do not write  
outside the  
box

26

Write the number  $240 \times 10^5$  in standard form.

[2 marks]

---

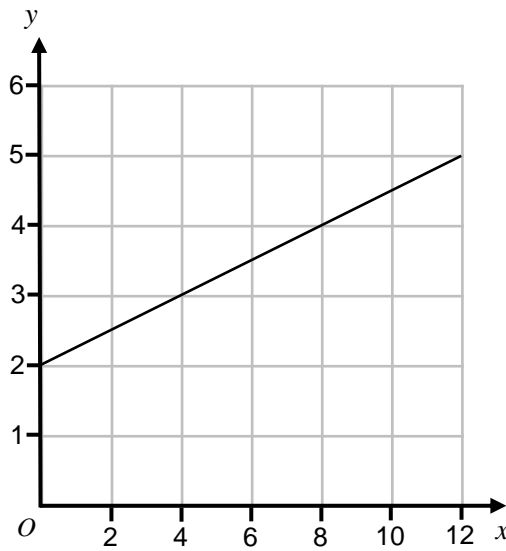
---

---

---

Answer \_\_\_\_\_

27



Work the gradient of the line.

[2 marks]

---

---

---

Answer \_\_\_\_\_