

**FORM 2**

**MATHEMATICS SCHEME A**  
**Non Calculator Paper**

**TIME: 30 minutes**

**Name:** \_\_\_\_\_

**Class:** \_\_\_\_\_

| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
|----------|---|---|---|---|---|---|---|-------|
| Mark     |   |   |   |   |   |   |   |       |

### Instructions to Candidates

- Answer all questions.
- This paper carries a total of 25 marks.
- Calculators and protractors are NOT ALLOWED.

1. These bathroom scales are showing a person's weight in kilograms. Write down the **weight** shown.



Ans: \_\_\_\_\_ kg

(1 mark)

2. This triangular shape is drawn to scale on squared paper. Make a **rough estimate** of:

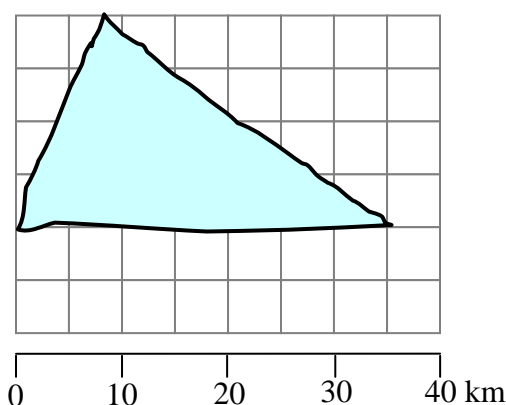
- (a) the **base** of the triangle.

Ans: \_\_\_\_\_ km

- (b) the **height** of the triangle.

Ans: \_\_\_\_\_ km

- (c) the **area** of the triangle.



Ans: \_\_\_\_\_ km<sup>2</sup>

(3 marks)

3. Match by drawing arrows:

$$\frac{3}{8}$$

$$0.\dot{4}2857\dot{1}$$

$$\frac{3}{7}$$

$$0.\dot{6}$$

$$\frac{3}{5}$$

$$0.\dot{3}75$$

(1 mark)

4. (a) Work out:

(i)  $6 + 8 \times 8 = \underline{\hspace{2cm}}$  (ii)  $17 - (-23) = \underline{\hspace{2cm}}$

(b) On the same day, the temperature in Berlin was exactly **half way** between the temperatures in Rome and Moscow. **Complete** the table below.

| Rome                | Berlin             | Moscow                |
|---------------------|--------------------|-----------------------|
| $8^{\circ}\text{C}$ | $^{\circ}\text{C}$ | $-18^{\circ}\text{C}$ |

(4 marks)

5.

(a) Write  $3\frac{2}{7}$  as an **improper fraction**.

Ans:           

(b) Work out: (i)  $\frac{1}{2} + \frac{2}{5}$  (ii)  $1\frac{7}{8} - \frac{3}{4}$

Ans:           

Ans:           

(5 marks)

6. (a) An elastic band, 20 cm long can stretch by 50%. What is the **stretched length**?

Ans:            cm

(b) Brian scored  $\frac{17}{20}$  in a test. Convert Brian's mark into a **percentage**.

Ans:            %

(c) Bronze is an alloy made of three different metals. 57% is Copper, 40% is Zinc and the rest is Lead. A bronze statue weighs 1000 kg. How much of it, in kg, is **Lead**?

Ans:            kg

(4 marks)

7. (a) Write down the first four multiples of 23.

Ans: \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ .

(b) Write 72 as a product of its prime factors.

Ans:  $72 =$  \_\_\_\_\_.

(c) A bus leaves the airport for Valletta every 45 minutes and a helicopter leaves the airport for Gozo every 120 minutes. If they **both** leave the airport at 06:00, what is the **next time** that the bus and helicopter leave together again?

Ans: \_\_\_\_\_

\_\_\_\_\_ (7 marks)

END OF PAPER

FORM 2

MATHEMATICS SCHEME A  
 Main Paper

TIME: 1h 30min

| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total<br>Main | Non Calc | Global<br>Mark |
|----------|---|---|---|---|---|---|---|---|---|----|----|----|---------------|----------|----------------|
| Mark     |   |   |   |   |   |   |   |   |   |    |    |    |               |          |                |

DO NOT WRITE ABOVE THIS LINE

Name: \_\_\_\_\_

Class: \_\_\_\_\_

CALCULATORS ARE ALLOWED BUT ALL NECESSARY WORKING MUST BE SHOWN.  
 ANSWER ALL QUESTIONS.

1. Use your **calculator** to work out the following:

(a)  $\left(\frac{3}{5} + \frac{1}{9}\right) \times \left(\frac{3}{4} - \frac{1}{8}\right)$

Ans: \_\_\_\_\_

(b)  $\frac{3}{5}$  of €950

Ans: €\_\_\_\_\_

(c)  $4.96^3$  Correct to 2 decimal places.

Ans: \_\_\_\_\_

\_\_\_\_\_ (5 marks)

2. A cereal mixture contains rice, wheat and corn in the ratio 2 : 3 : 5.  
 A bag of this cereal mixture contains 80 g of rice.

(a) How much **corn** does it contain?

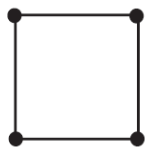
Ans: \_\_\_\_\_ g

(b) Calculate the **weight** of the bag.

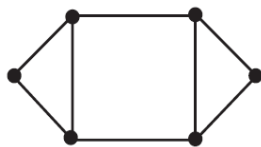
Ans: \_\_\_\_\_ g

\_\_\_\_\_ (6 marks)

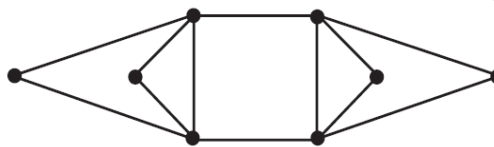
3. This is a sequence of shapes made up of dots and lines.



Stage 1



Stage 2



Stage 3

(a) Complete the table to show the number of dots and the number of lines in each shape.

| Stage           | 1 | 2 | 3 | 4 |
|-----------------|---|---|---|---|
| Number of dots  | 4 |   |   |   |
| Number of lines |   | 8 |   |   |

(b) How many **dots** are there in **stage 8**?

Ans: \_\_\_\_\_

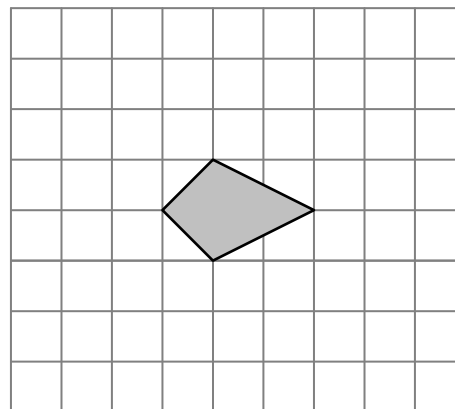
(c) Which **stage** will contain **28 lines**?

Ans: \_\_\_\_\_

(5 marks)

4. (a) Underline the correct word:  
The kite has (reflective, rotational) symmetry.

(b) Draw **at least 4** more of the kite on the grid to show that it can tessellate.



(c) (i) Use your ruler to measure the **base** and **height** of this parallelogram.



Ans: base = \_\_\_\_\_ cm; height = \_\_\_\_\_ cm

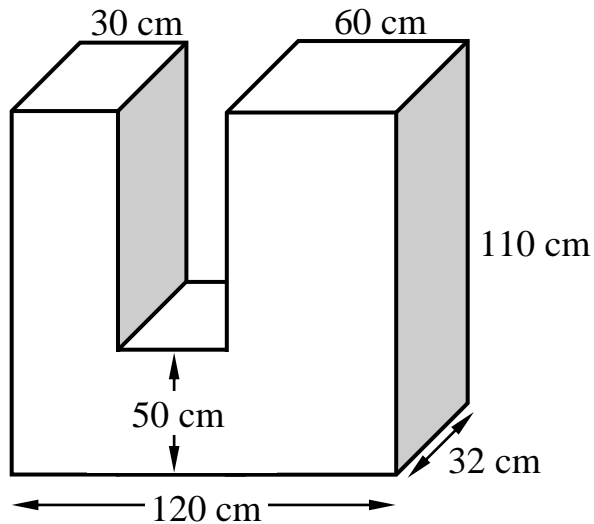
(ii) Use your measurements to find the **area** of the parallelogram.

Ans: \_\_\_\_\_ cm<sup>2</sup>

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(d) This solid is made up of three cuboids. Calculate its **volume**.



Ans: \_\_\_\_\_  $\text{cm}^3$

(11 marks)

5. (a) **Simplify:**  $4a + 3a - 2a$

Ans: \_\_\_\_\_

(b) **Expand:**  $7(3y - 5)$

Ans: \_\_\_\_\_

(c) **Factorise:**  $4k + 14$

Ans: \_\_\_\_\_

(d) **Solve** the equation:  $12 + 3x = 27$

Ans:  $x =$  \_\_\_\_\_

(e) Judith spends €1.22 at the greengrocer. She buys 6 oranges and 8 apples.  
The oranges cost 7c each.

(i) **Write an equation** showing this information. Use  $x$  for the cost of an apple in cent.

Ans: \_\_\_\_\_

(ii) **Solve** your equation to find the cost of an apple.

Ans:  $x =$  \_\_\_\_\_

(8 marks)

6. Clive sits for 7 examinations and scores the following marks:

68, 60, 23, 65, 67, 72, 72.

(a) What is the **median** mark?

Ans: median = \_\_\_\_\_

(b) Calculate the **mean** mark.

Ans: mean = \_\_\_\_\_

(c) What is the **mode**?

Ans: mode = \_\_\_\_\_

(d) (i) Underline the correct word: The (median, mean, mode) **best represents** all of Clive's marks.

(ii) Give a reason for your answer.

\_\_\_\_\_

\_\_\_\_\_ (8 marks)

7. A survey on all the classes at a school is carried out to find the number of left-handed students in each class. The frequency table below shows the results.

|                                |   |   |    |   |   |   |
|--------------------------------|---|---|----|---|---|---|
| Number of left-handed students | 0 | 1 | 2  | 3 | 4 | 5 |
| Frequency (Number of classes)  | 2 | 3 | 12 | 9 | 3 | 1 |

(a) **How many classes** have 3 left-handed students?

Ans: \_\_\_\_\_

(b) A class is selected at random. What is the **probability** that it has **one** left-handed student?

Ans: \_\_\_\_\_

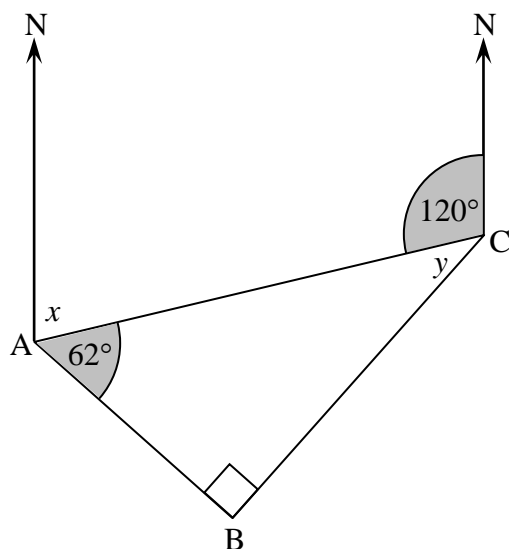
(c) Calculate the number of left-handed students **in the school**.

Ans: \_\_\_\_\_

\_\_\_\_\_ (4 marks)



8.



The diagram shows the positions of the points A, B and C.

(a) Calculate the angle marked  $x$ .

Ans:  $x =$  \_\_\_\_\_

(b) Calculate the angle marked  $y$ .

Ans:  $y =$  \_\_\_\_\_

(c) What is the bearing of B from A?

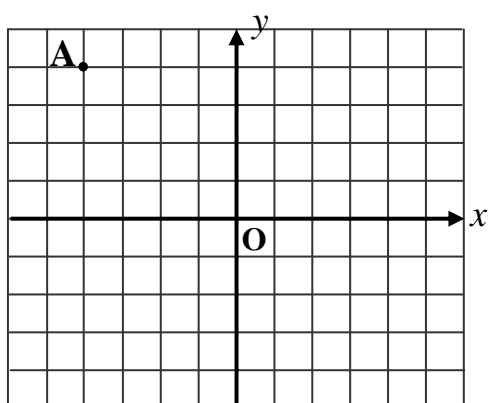
Ans: \_\_\_\_\_

(d) What is the bearing of B from C?

Ans: \_\_\_\_\_

(8 marks)

9.



(a) **Reflect** point A in the  $y$  axis.

Label this point B.

(b) **Rotate** point A  $180^\circ$  about the origin O.

Label this point C.

(c) **Translate** point A, 3 right and 8 down.

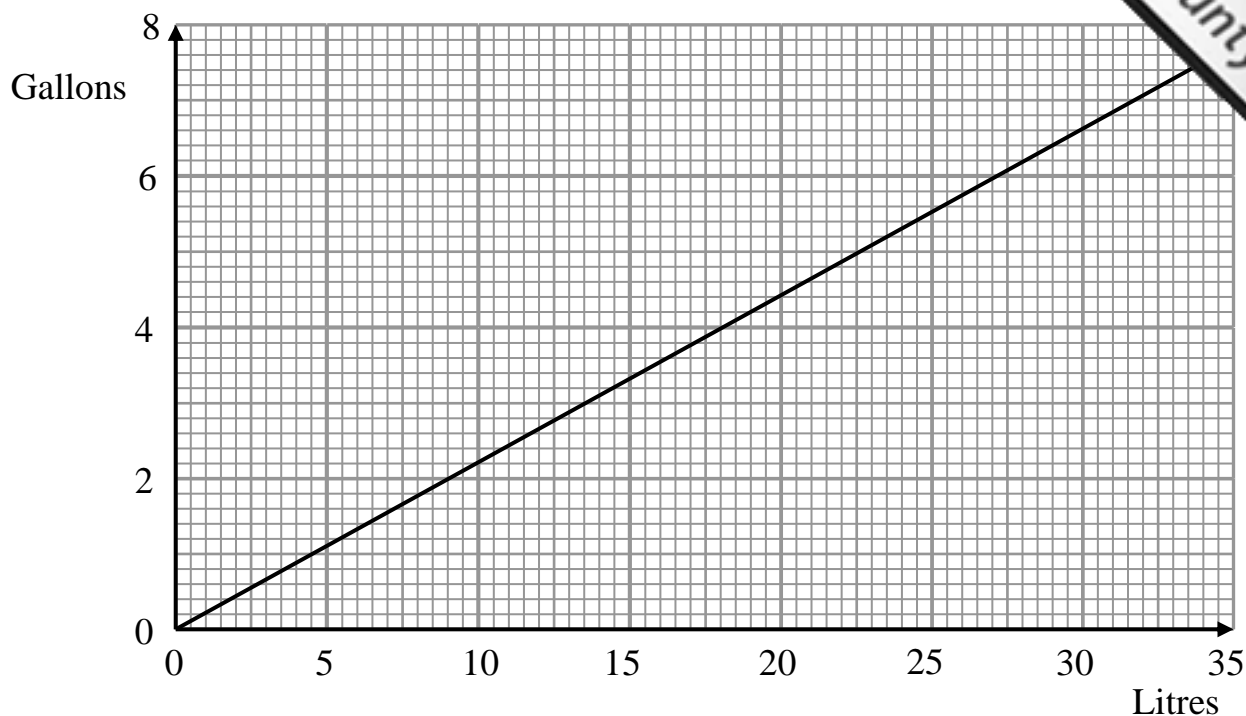
Label this point D.

(d) **Join** ABCD and write down the name of the quadrilateral ABCD.

Ans: \_\_\_\_\_

(4 marks)

10. This graph is a conversion graph for gallons and litres.



Use this graph to:

(a) Convert **20 litres** into gallons correct to 1 decimal place.

Ans: \_\_\_\_\_gallons

(b) Convert **7 gallons** into litres correct to the nearest litre.

Ans: \_\_\_\_\_litres

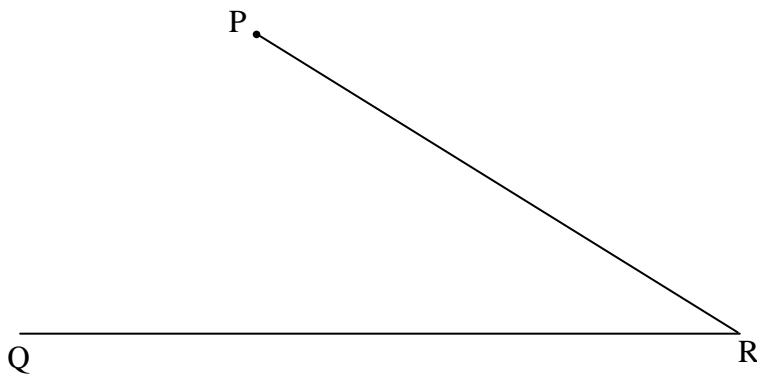
(c) Use your answer in (b) to convert **35 gallons** into litres.

Ans: \_\_\_\_\_litres

\_\_\_\_\_ (4 marks)

11. (a) Use **ruler and compasses only** to:

- (i) Construct the **perpendicular** from point P to the line QR to meet QR at S.
- (ii) Construct the **bisector** of  $\angle SPR$  to meet QR at T.



(b)

- (i) Mark the **angle of elevation** of P from T on your diagram.
- (ii) Use your **protractor** to measure the **angle of elevation** of P from T.

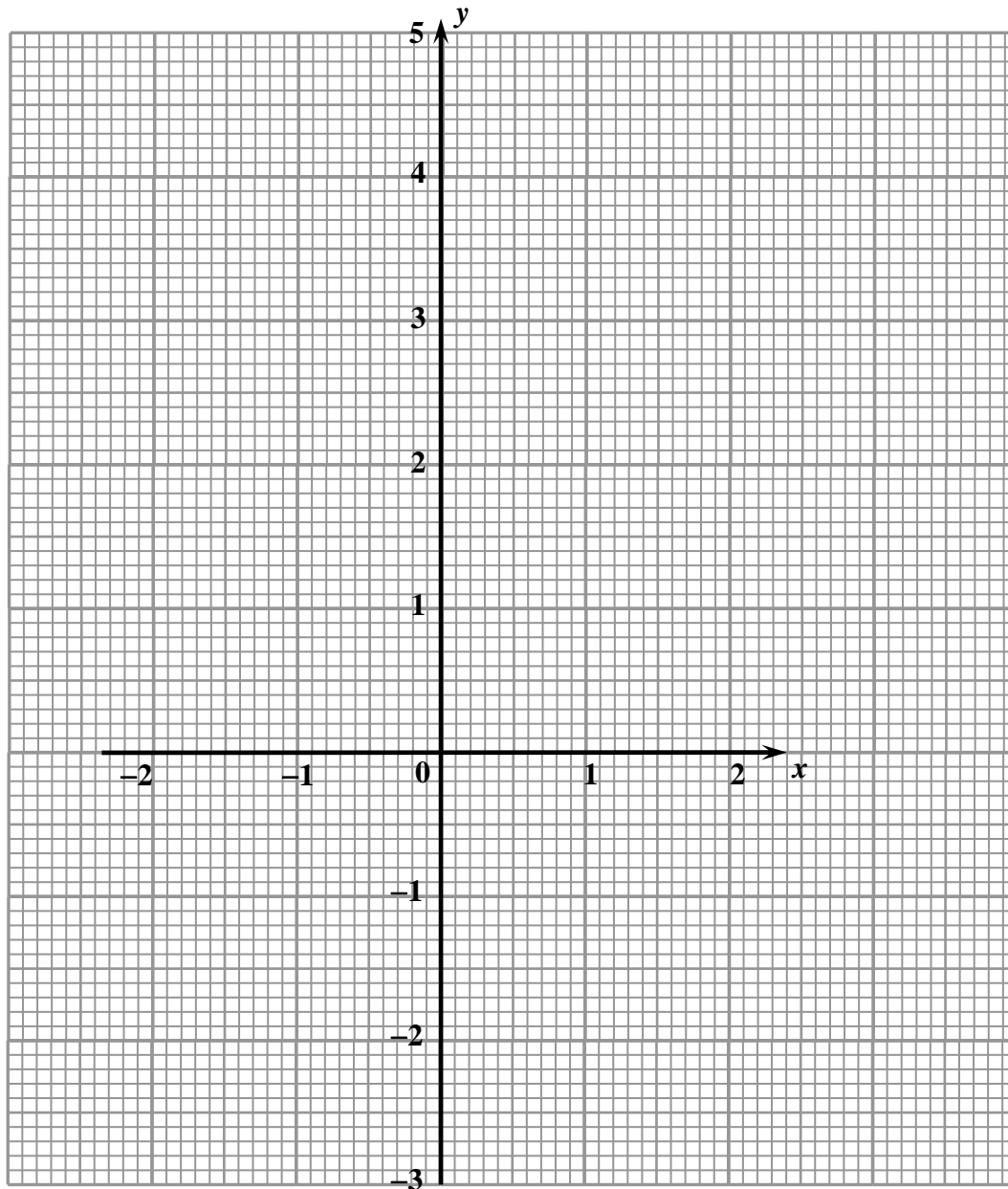
Ans: \_\_\_\_\_°

\_\_\_\_\_ (6 marks)

12. (a) Complete the table for  $y = 2x + 1$ .

| $x$  | -2 | -1 | 0 | 1  | 2 |
|------|----|----|---|----|---|
| $2x$ |    | -2 |   |    | 4 |
| $+1$ |    | +1 |   | +1 |   |
| $y$  |    | -1 |   |    | 5 |

(b) Draw the graph of  $y = 2x + 1$  on the grid below.



(c) Calculate the **gradient** of the graph.

Ans: \_\_\_\_\_

(6 marks)

END OF PAPER