

**FORM 4**

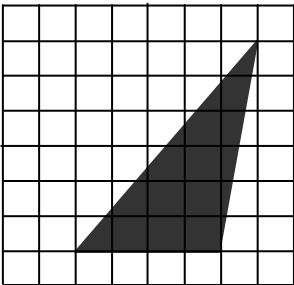
**MATHEMATICS SCHEME D**  
**Non Calculator Paper**

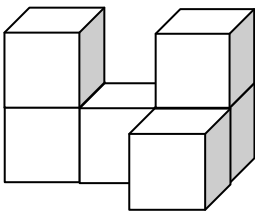
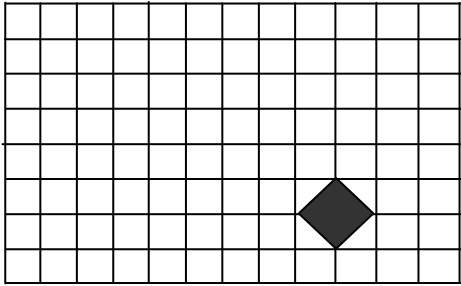
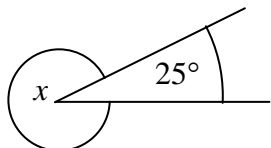
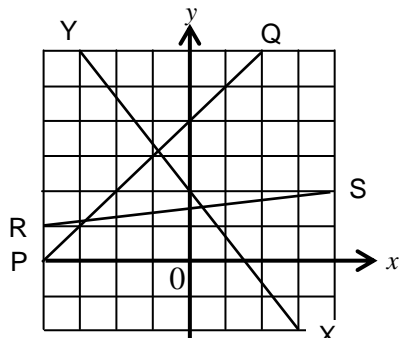
**TIME: 20 minutes**

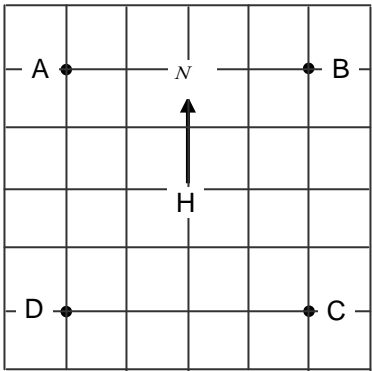
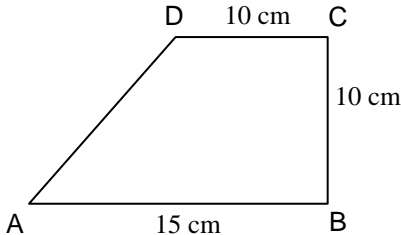
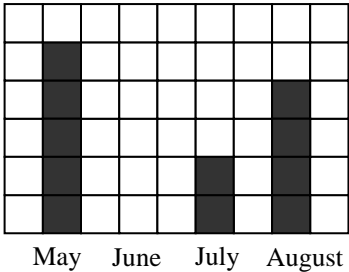

Mark

### **INSTRUCTIONS TO CANDIDATES**

- **Answer all questions.**
- **This paper carries a total of 20 marks.**
- **Calculators and protractors are NOT ALLOWED.**

No.	Question	Space for working if required
1.	<p>One of these numbers is a prime number. Which one is it?</p> <p>A) 2065      B) 3034      C) 2727      D) 37</p> <p>Answer: _____</p>	
2.	 <p>What is the area of the triangle? (Each square is 1 cm by 1 cm.)</p> <p>Answer: _____ cm<sup>2</sup></p>	
3.	<p>Write down the output of this number machine in the empty box.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 0 5px;">Input</div> <div style="border: 1px solid black; padding: 5px; margin: 0 5px;">24</div> <div style="margin: 0 5px;">→</div> <div style="border: 1px solid black; padding: 5px; margin: 0 5px;">÷ 4</div> <div style="margin: 0 5px;">→</div> <div style="border: 1px solid black; padding: 5px; margin: 0 5px;">+ 2</div> <div style="margin: 0 5px;">→</div> <div style="border: 1px solid black; padding: 5px; margin: 0 5px;">Output</div> <div style="border: 1px solid black; width: 60px; height: 30px; margin: 0 5px;"></div> </div>	
4.	<p>Solve:              <math>2x + 5 = 15</math></p> <p>Answer: _____</p>	
5.	<p>Work out the mean of the following numbers:</p> <p style="text-align: center;">12    12    12    22    12</p> <p>Answer: _____</p>	
6.	<p>Fill in the box:</p> <p style="text-align: center;"><math>0.4 = \frac{\boxed{\phantom{00}}}{5}</math></p>	
7.	<p>Fill in the missing number:</p> <p style="text-align: center;">10    15    _____    25    30</p>	
8.	<p>If <math>y = 5x + 2</math>, find <math>y</math> when <math>x = 3</math>.</p> <p style="text-align: right;"><math>y =</math> _____</p>	

9.	 <p>Each cube has side 2 cm. What is the volume of the shape?</p> <p>Answer: _____ cm<sup>3</sup></p>	
10.	<p>I have 6 gold and 3 silver rings in my pocket. I pick one at random. What is the probability that I pick a gold ring?</p> <p>Answer: _____</p>	
11.	<p>Translate the shape shown by 6 units to the left and 4 units up.</p> 	
12.	<p>Find the size of <math>x</math>:</p>  <p>Answer: _____ °</p>	
13.	 <p>The equation <math>y = x + 4</math> represents the line</p> <p>A) XY   B) PQ   C) RS</p> <p>Answer: _____</p>	
14.	<p>Work out</p> $2^3 - 4$ <p>Answer: _____</p>	

15.	Simplify: $2p + q - p + 3q = \underline{\hspace{2cm}}$									
16.	A school lies South East from the hospital (H). The school is at _____. Choose from A, B, C and D.									
17.	 <p>Work out AD if the perimeter of ABCD is 47 cm.</p> <p>Answer: _____ cm</p>									
18.	Expand $2(21 - 3x) = \underline{\hspace{2cm}}$									
19.	The table below shows the amount of rainfall in centimetres: <table border="1" data-bbox="360 1344 870 1453"><tr><th>May</th><th>June</th><th>July</th><th>August</th></tr><tr><td>5</td><td>3</td><td>2</td><td>4</td></tr></table> <p>Complete the bar graph.</p>	May	June	July	August	5	3	2	4	
May	June	July	August							
5	3	2	4							
20.	The turtle starts from the position shown. Sketch the figure drawn by the turtle for this set of LOGO commands:  PD FD 100 LT 90 FD 50 LT 90 FD 100									

**FORM 4**

**MATHEMATICS SCHEME D**

**TIME: 1h 40min**

**Main Paper**

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total Main	Non Calc	Global Mark
Mark																	

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

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

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

1. (a) Work out the following:

$$736 - 219 + 123 = \underline{\hspace{2cm}}$$

- (b) Two of the following numbers are square numbers. Which are they?

27      36      15      64      243

The numbers are \_\_\_\_\_ and \_\_\_\_\_.

(3 marks)

2. (a) Simplify the ratios

(i) 32 : 8

Answer: \_\_\_\_\_

(ii) 125 : 65

Answer: \_\_\_\_\_

- (b) Write down the number 52,300 in words.

\_\_\_\_\_

(4 marks)

3. (a) Which one of these numbers is greater than  $\frac{1}{5}$  ?

0.15       $\frac{1}{3}$        $\frac{1}{7}$       0.1

Answer: \_\_\_\_\_

- (b) Write  $7.56 \times 10^3$  as an ordinary number. \_\_\_\_\_

- (c) One of these dates is not correct. Which one is it?

28 February      31 April      30 March      31 July

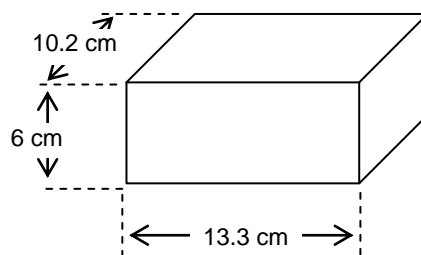
Answer: \_\_\_\_\_

- (d) What is 25% of 116?

Answer: \_\_\_\_\_

(4 marks)

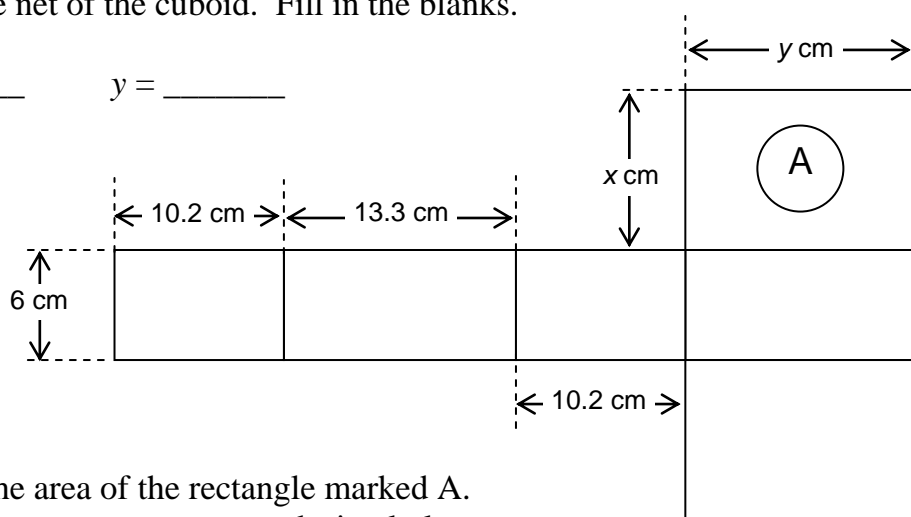
4. (a) Work out the volume of the cuboid.



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

- (b) Below is the net of the cuboid. Fill in the blanks.

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



- (c) Work out the area of the rectangle marked A.  
Give your answer correct to one decimal place.

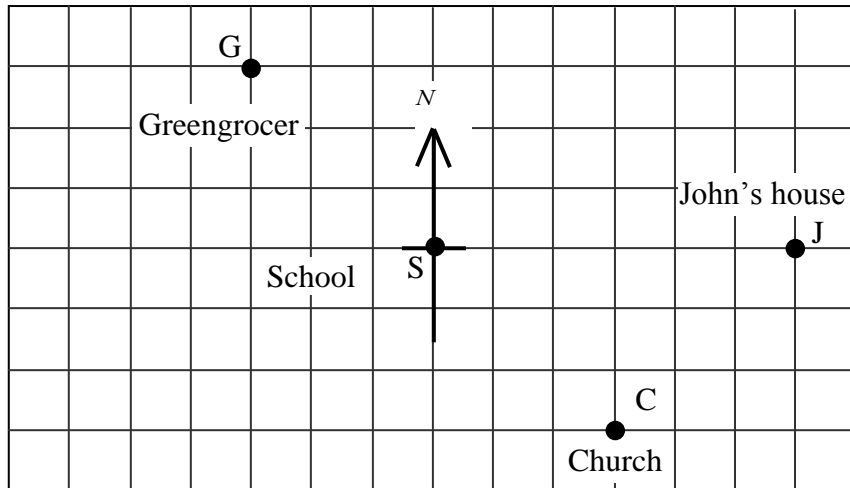
Answer: \_\_\_\_\_  $\text{cm}^2$

(6 marks)

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

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

5. Use the map drawn below to answer the questions.  $N$  denotes the North direction.



Choose your answers from the eight main compass directions  
N, S, W, E, NW, NE, SW and SE.

- (a) The church lies \_\_\_\_\_ of the school.  
 (b) John's house lies \_\_\_\_\_ of the church.  
 (c) The greengrocer lies \_\_\_\_\_ of the church.  
 (d) Choose the angle SCJ from the values given below.  
 $45^\circ$      $135^\circ$      $90^\circ$      $60^\circ$

Answer: \_\_\_\_\_ $^\circ$

(4 marks)

6. (a) Solve the equations:

(i)  $5x + 6 = 26$

Answer: \_\_\_\_\_

(ii)  $4x - 1 = 11$

Answer: \_\_\_\_\_

(b) Expand  $2(3 - x + 2y)$

Answer: \_\_\_\_\_

(6 marks)

7. (a) Complete the following sequence:

3      12      21      \_\_\_\_\_      39      \_\_\_\_\_

- (b) I have fifteen 5c coins, twenty 10c coins and five 50c coins in my pocket. How much money do I have altogether?

Answer: € \_\_\_\_\_

(5 marks)

8. (a) A cinema ticket costs €6.40.

- (i) I buy two cinema tickets. What change will I get from €15?

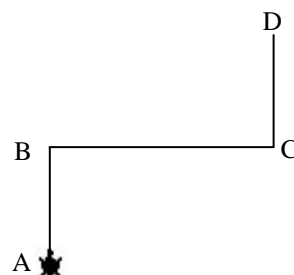
Answer: € \_\_\_\_\_

- (ii) How many cinema tickets can I buy with €20?

Answer: \_\_\_\_\_

- (b) In the LOGO shape shown  $AB = CD = 50$  turtle steps and  $BC = 100$  turtle steps. Complete the program to draw the shape.

PD  
FD 50  
\_\_\_\_ 90  
FD \_\_\_\_  
LT \_\_\_\_  
FD \_\_\_\_



(7 marks)

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

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

9. (a) An aeroplane can carry 160 passengers when full. How many passengers is the aeroplane carrying when it is  $\frac{3}{4}$  full?

Answer: \_\_\_\_\_

- (b) An umbrella costs €5.20. How much do 20 umbrellas cost?

Answer: €\_\_\_\_\_

- (c) (i) Express 3915.6 to the nearest ten: \_\_\_\_\_.

- (ii) Work out:  $2(-145 - 55) =$  \_\_\_\_\_.

(6 marks)

10. In a box there are 9 red, 6 blue and 3 yellow counters. I pick a counter at random. Answer the following questions, giving each answer in its simplest form.

- (a) What is the probability of picking a red counter?

Answer: \_\_\_\_\_

- (b) What is the probability of picking a blue counter?

Answer: \_\_\_\_\_

- (c) What is the probability of picking a yellow counter?

Answer: \_\_\_\_\_

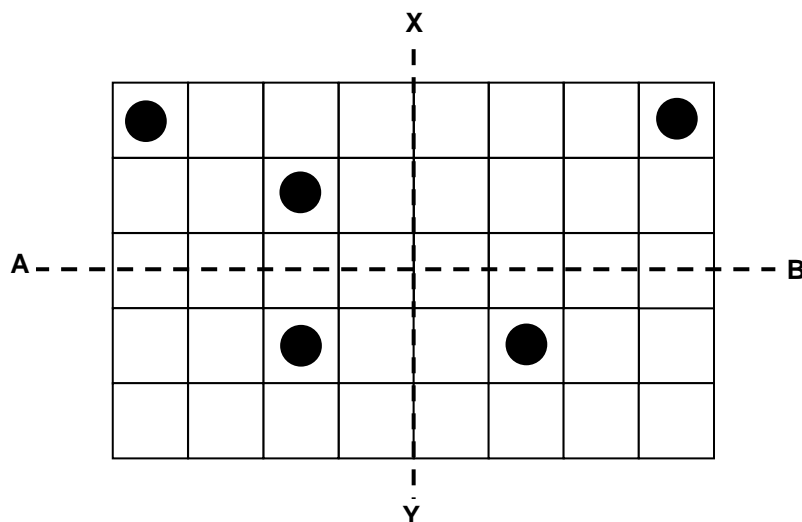
I remove the yellow counters.

- (d) What is the probability of picking a red counter?

Answer: \_\_\_\_\_

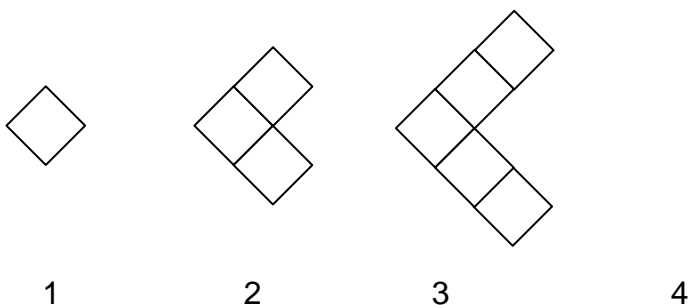
(4 marks)

11. (a) The diagram shows the tiles on the floor of a yard.



- (i) Make the pattern symmetrical about the lines AB and XY by marking three tiles with a black circle.
- (ii) Is there another line of symmetry?  
Write YES or NO. Answer: \_\_\_\_\_

(b)



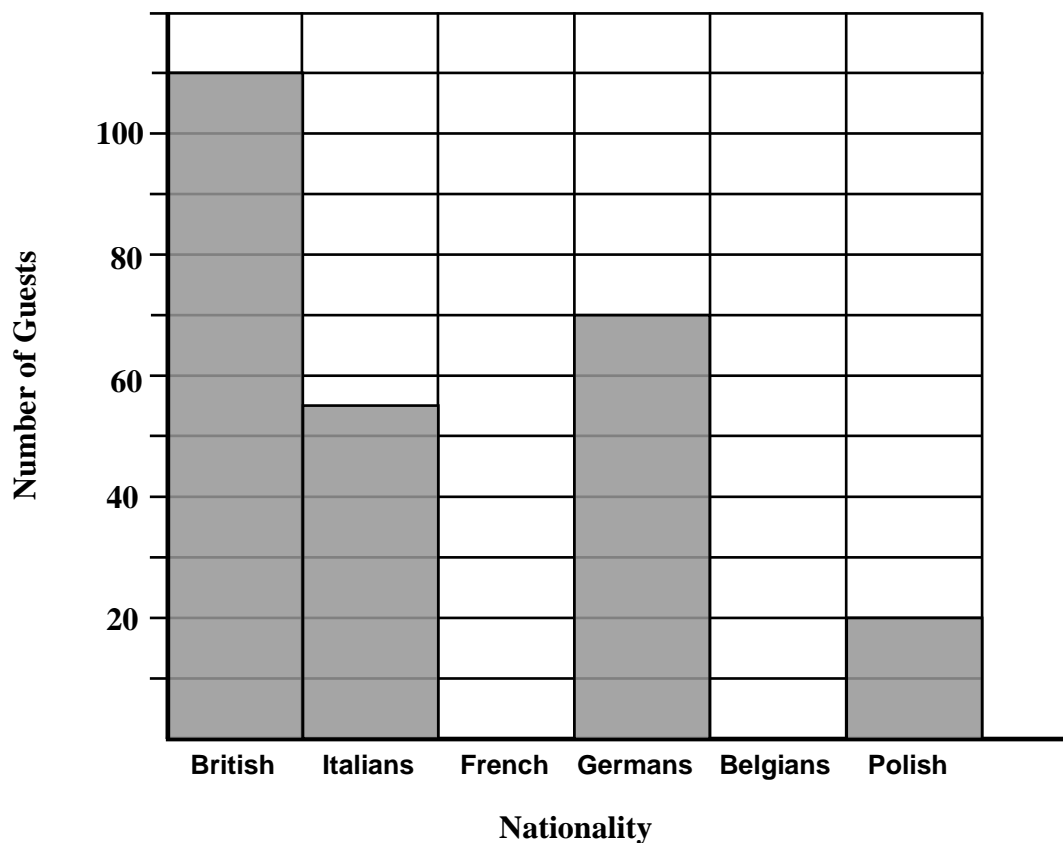
- (i) Draw shape 4.
- (ii) Shape 5 will have \_\_\_\_\_ squares.
- (iii) Choose the correct rule for the number of correct squares in shape  $n$ .
- (A)  $n + 3$       (B)  $6 - 2n$       (C)  $2n - 1$       (D)  $3n + 1$

Answer: \_\_\_\_\_

(7 marks)

12. The manager of a hotel has collected the following data on the national guests in his hotel:

Nationality	British	Italians	French	Germans	Belgians	Polish
Number of Guests	110	55	45	70	30	20



- (a) Use the table to complete the bar chart.
- (b) What is the total number of guests in the hotel?

Answer: \_\_\_\_\_

- (c) A guest is chosen at random. What is the probability that the guest is British?  
*Express the probability in its simplest form.*

Answer: \_\_\_\_\_

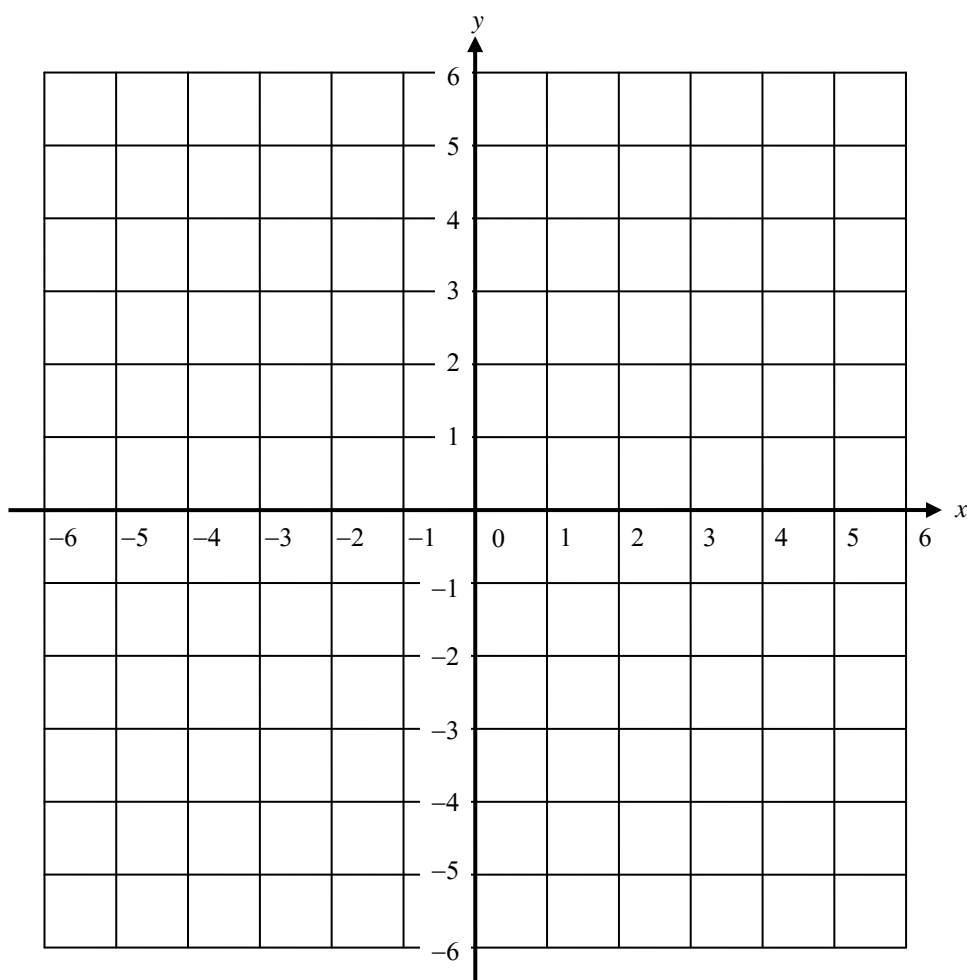
- (d) What is the ratio of Italians to Germans? \_\_\_\_\_ : \_\_\_\_\_  
*Express the ratio in its simplest form.*

(9 marks)

13. (a) Mark the points  $(-5, 4)$  and  $(4, -5)$  on the grid.
- (b) Draw the line passing through these two points.
- (c) Use your graph to complete the following pairs of coordinates:

$(-3, \quad)$

$(\quad, 3)$

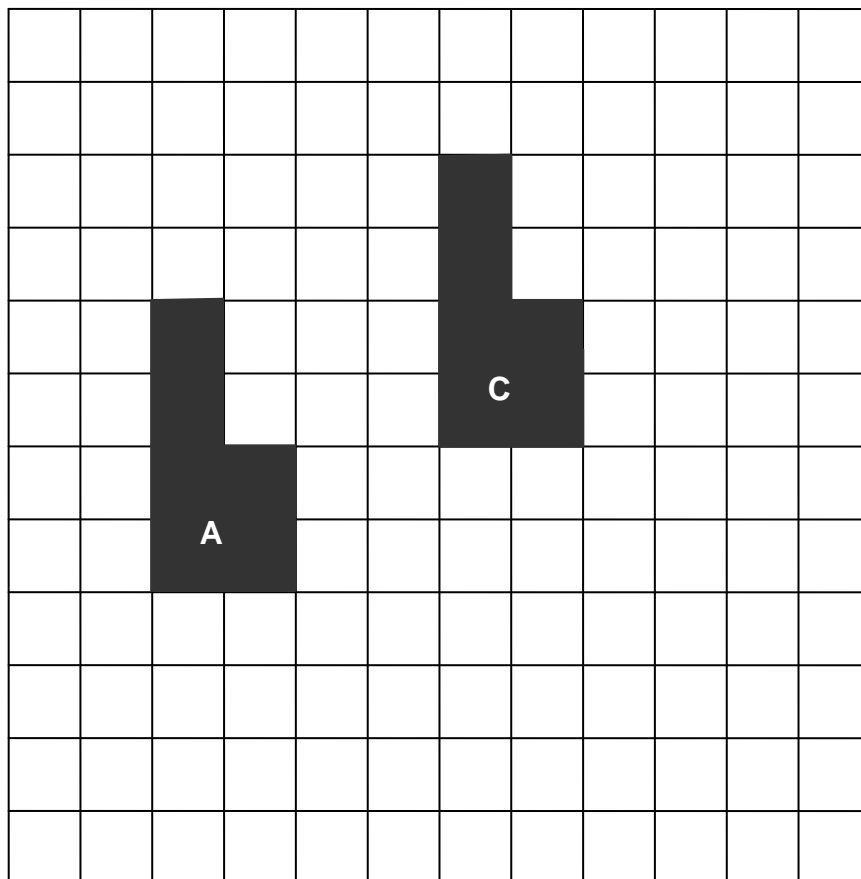


(6 marks)

14. (a) (i) A is translated by moving 6 units to the right and 4 units down.  
Draw the shape and label it B.

- (ii) A is translated to C by moving

\_\_\_\_\_ units to the right and \_\_\_\_\_ units up.



- (b) There are seven drawers. The number of pencils in each drawer is as follows:

12    5    2    13    30    10    12

- (i) What is the **mean** number of pencils?

Answer: \_\_\_\_\_

- (ii) What is the **median**?

Answer: \_\_\_\_\_

(9 marks)

End of Paper

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