



FORM 2 MATHEMATICS (Non Calculator Paper) TIME: 30 minutes

Name: _____

Class: _____

Question	1	2	3	4	5	6	7	8	9	10	Total
Mark											

INSTRUCTIONS TO CANDIDATES

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

1. Work out the following:

a) $405 \times (-9) =$

Ans. _____

b) $2.75 - (-1.25) =$

Ans. _____

c) $(108 + 76) \div 8 =$

Ans. _____

(3 marks)

2. Convert $\frac{3}{5}$ to a percentage.

Ans. _____

(1 mark)

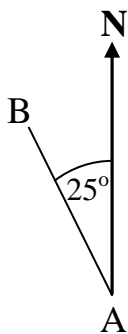
3. Estimate the value of:

$$\frac{49.75 \times 8.21}{10.3 + 9.7} =$$

Ans. _____

(2 marks)

4.



The bearing of B from A is _____°.

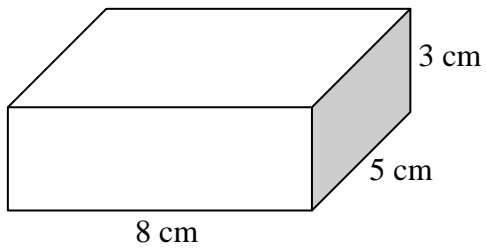
(1 mark)

5. If $x = a^2 - 6b$, find the value of x when $a = 7$ and $b = 3$.

$x =$ _____

(2 marks)

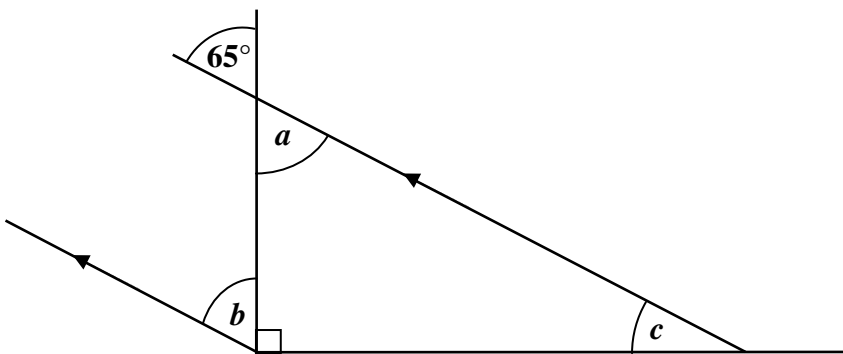
6. Calculate the total surface area of the cuboid.



surface area = _____ cm^2

(3 marks)

7. Find the value of the angles marked a , b and c .



$a =$ _____ $^\circ$

$b =$ _____ $^\circ$

$c =$ _____ $^\circ$

(3 marks)

8. a) Write all the **prime numbers** between 40 and 50. _____
- b) Write three **factors** of 12. _____
- c) Write three **multiples** of 9. _____

(3 marks)

9. a) Evaluate:

$$1\frac{2}{3} - \frac{4}{5} =$$

Ans. _____

- b) Give your answer as a **mixed number**.

Find the value of: $\left(\frac{2}{7} + \frac{3}{14}\right) \div \frac{3}{8} =$

Ans. _____

(4 marks)

10. A shoe shop sold 9 pairs of shoes in an hour. The sizes of the shoes sold were:

34 36 38 34 38 39 37 38 36

From the above sizes find:

- a) the mode

Ans. _____

- b) the median

Ans. _____

(3 marks)

END OF PAPER



FORM 2

MATHEMATICS (Main Paper)

TIME: 1h 30 min

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

Name: _____

Class: _____

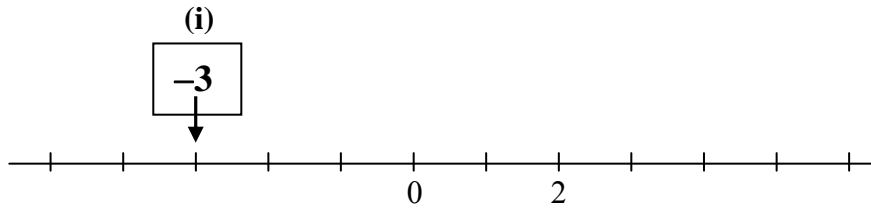
**CALCULATORS ARE ALLOWED BUT ALL NECESSARY WORKING MUST BE SHOWN.
ANSWER ALL QUESTIONS.**

1. a) Evaluate:

$$\sqrt{25.2 \times 17.5} - 6.5$$

Ans. _____

- b) On the number line below, draw arrows to mark the given points.
The first one has been done for you.



- (i) -3 (ii) 1 (iii) 4.5 (iv) $-\frac{1}{4}$

(5 marks)

2. a) Match each sequence to the rule in words.

$-2, 1, 6, 13, \dots$

$5, 8, 11, 14, \dots$

$3, 9, 15, 21, \dots$

- (i) The odd numbers multiplied by 3. _____
- (ii) 3 less than the square numbers. _____
- (iii) 2 more than the 3 times table. _____

- b) Write the next term for each sequence:

$-2, 1, 6, 13, \underline{\hspace{2cm}}$

$5, 8, 11, 14, \underline{\hspace{2cm}}$

$3, 9, 15, 21, \underline{\hspace{2cm}}$

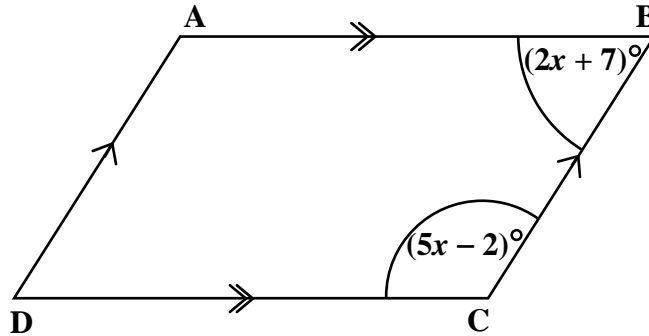
(5 marks)

Name: _____

Class: _____

A

3. ABCD is a parallelogram. Angle ABC is $(2x + 7)^\circ$ and angle BCD is $(5x - 2)^\circ$.



- a) Write an equation for the sum of the angles of parallelogram ABCD. Give your answer in terms of x .

- b) Find the value of x .

$$x = \underline{\hspace{2cm}}$$

- c) Find the value of:

- (i) $\angle ABC$

$$\angle ABC = \underline{\hspace{2cm}}^\circ$$

- (ii) $\angle BCD$

$$\angle BCD = \underline{\hspace{2cm}}^\circ$$

(8 marks)

4. Joe drives a total distance of 1316 km. He drives $\frac{1}{4}$ of the distance on Monday. On Tuesday he drives 521 km. Joe drives the rest of the distance on Wednesday. What distance did Joe drive:

a) on Monday?

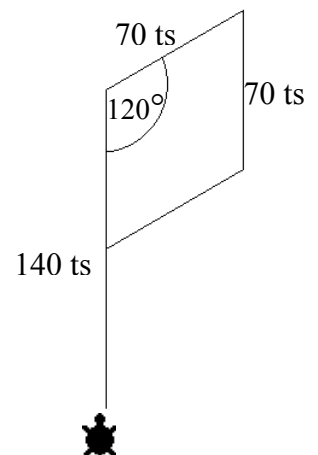
Monday = _____ km

b) on Wednesday?

Wednesday = _____ km

(4 marks)

5. Diane uses LOGO to draw the flag shown in the diagram. The flag is in the shape of a **rhombus**.



Complete the following set of commands that will trace out the flag and bring the turtle back to its starting position.

PD FD 140 RT _____ FD 70 _____ 120 FD _____ RT 60 FD _____ RT 120 BK _____

(5 marks)

Name: _____

Class: _____



6. Use ruler and compasses only in the following construction.
Show all construction lines.



- a) On the given line mark a point B such that $AB = 8$ cm.
- b) Draw AC such that $\angle A = 90^\circ$ and $AC = 6$ cm. Join BC.
- c) Measure $\angle B$. $\angle B = \underline{\hspace{2cm}}^\circ$
- d) Draw the bisector of $\angle B$ and let it cut AC at P.
- e) Measure AP. $AP = \underline{\hspace{2cm}}$ cm

(7 marks)

7. The ratio of **Martina**'s pocket money to **Julian**'s pocket money is **3 : 2**. Together they receive a total of €13 pocket money each week.

a) How much pocket money does:

(i) Martina receive each week?

Martina: € _____

(ii) Julian receive each week?

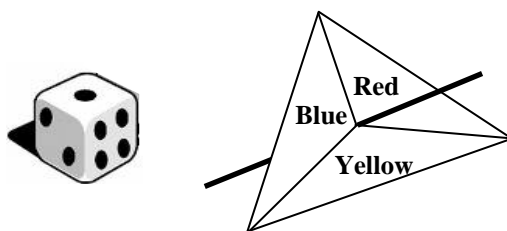
Julian: € _____

b) Julian did well in his exams. He receives a 25% increase in his pocket money this week. How much pocket money does Julian receive this week?

Ans. € _____

(6 marks)

8. In a game, each player must throw the dice and spin the colour top shown in the diagram.



- a) Complete the table below to show all the possible combinations.

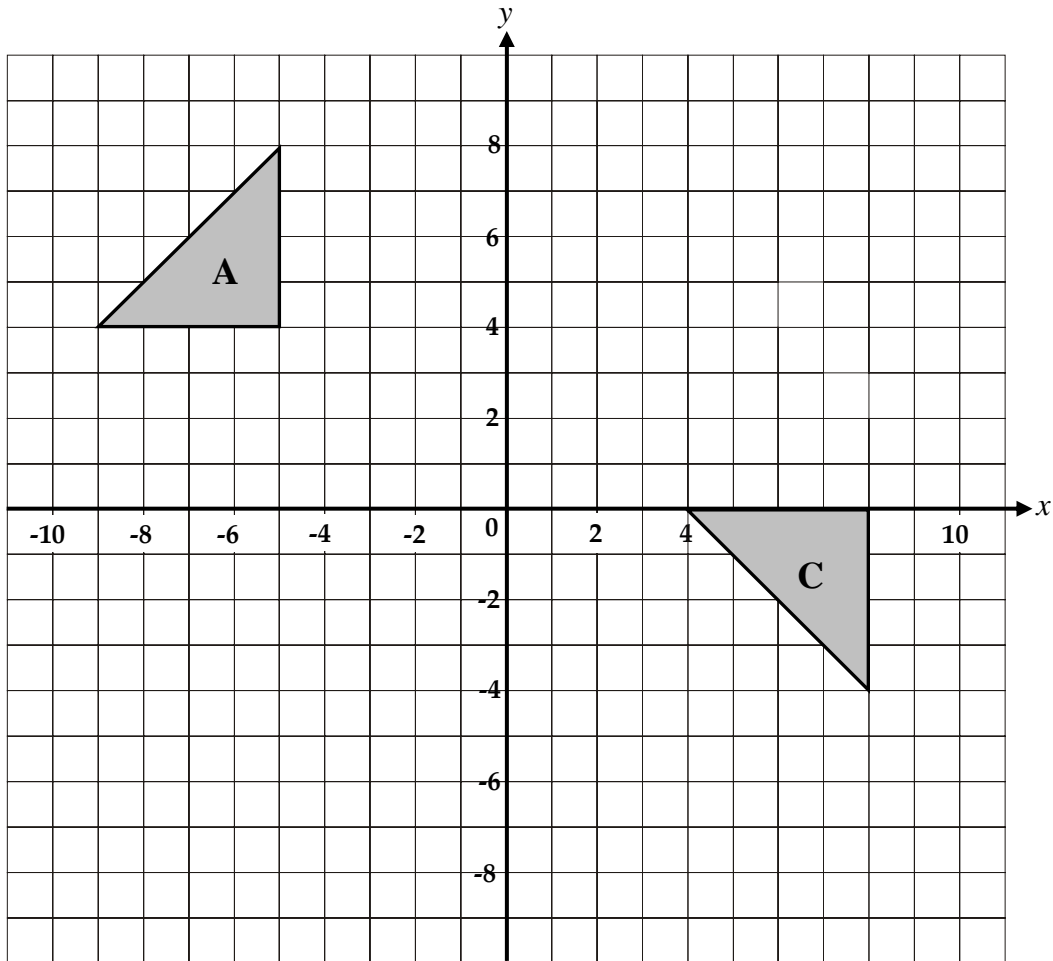
	1	2	3	4	5	6
Red (R)	1, R	2, R				
Blue (B)			3, B		5, B	6, B
Yellow (Y)				4, Y		

- b) What is the probability of getting a yellow?

- c) What is the probability of getting a 3 and a yellow?

(5 marks)

9.



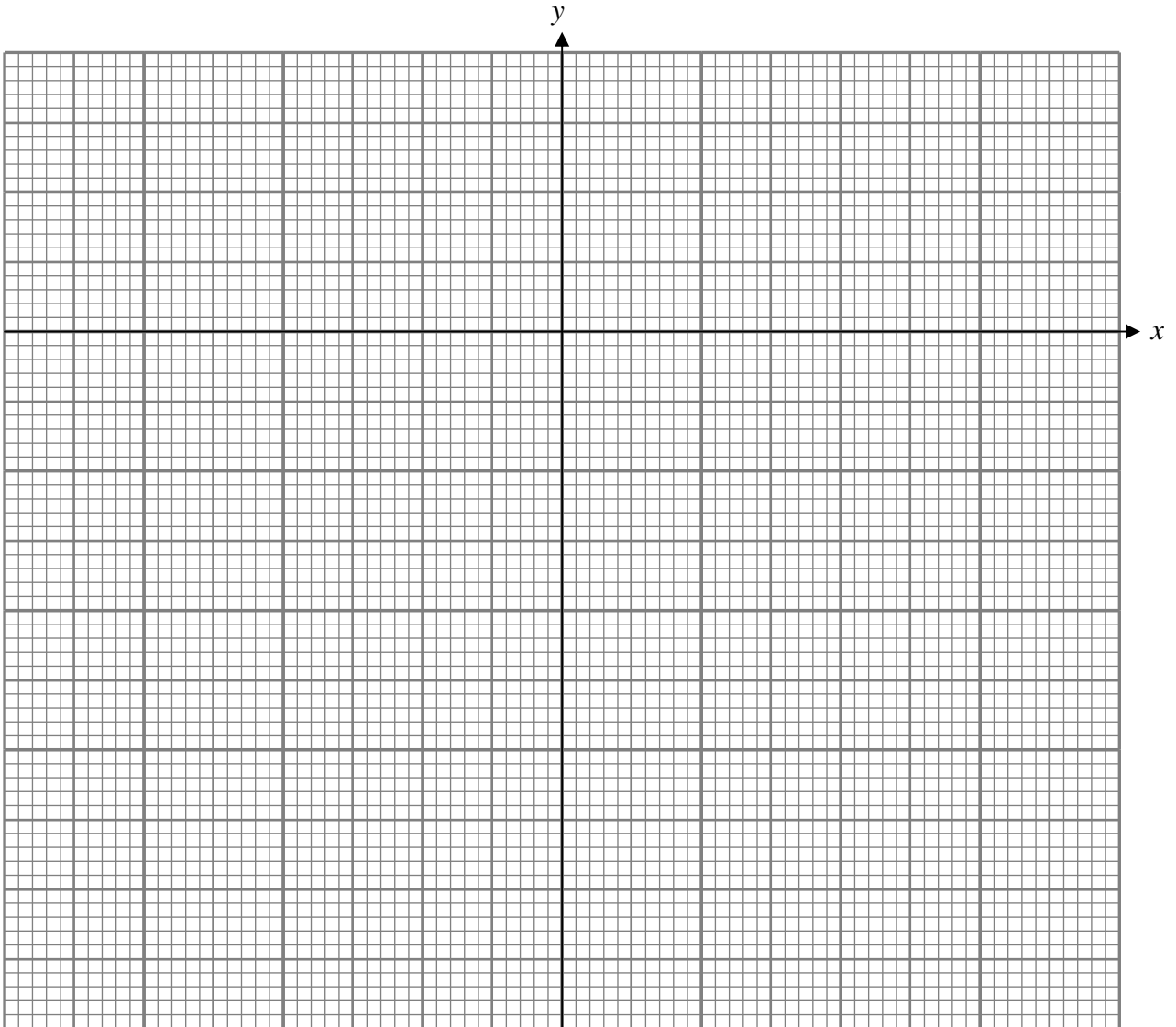
- a) On the grid provided, translate triangle A by 5 to the right and 4 down. Label the image **B**. Shade **B**.
- b) Reflect triangle C in the line $x = 4$. Label the image **D**. Shade **D**.
- c) Complete the following statement:
Triangle D is the image of triangle B after a _____
through an angle of _____[°] about the origin.
- d) Triangles **B** and **D** together form a shape.
This shape has rotational symmetry of order _____.

(7 marks)

10. a) Complete the table for $y = 2x - 3$.

x	-3	-1	0	2	3
$2x$	-6				6
-3	-3		-3		
y	-9	-5		1	

b) Use your table to draw the graph of $y = 2x - 3$. Use 2 cm to represent 1 unit on the x axis and 2 cm to represent 2 units on the y axis.



c) **From your graph** find:

(i) the value of x when $y = -7$.

$x =$ _____

(ii) the gradient of the graph.

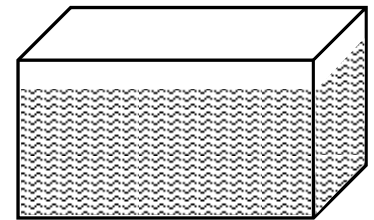
gradient = _____

(10 marks)

11. Carl wanted to buy a fish tank that has the shape of a cuboid. The pet shop had three sizes of tanks. Carl used a spreadsheet to work out the volume of each fish tank in cm^3 .

	A	B	C	D	E	F
1		Length in cm	Breadth in cm	Height in cm	Volume of tank in cm^3	Volume of water in cm^3
2	Fish Tank 1	60	30	50	90 000	
3	Fish Tank 2	75	30	45		
4	Fish Tank 3	90	30	33	89 100	

- a) What **formula** should Carl write in cell **E3**? _____
- b) What **value** should there be in cell **E3**? _____



- c) (i) Carl decided to buy Fish Tank 3.
He filled 80% of the fish tank with water.
What volume, in cm^3 , of the tank is filled with water?

Ans. _____ cm^3

- (ii) Carl wants to work out the **volume of water** in the tank using the spreadsheet.
Which two of the following formulae can Carl write in cell **F4**?

`=E4*80/100`

`=SUM(B4:D4)`

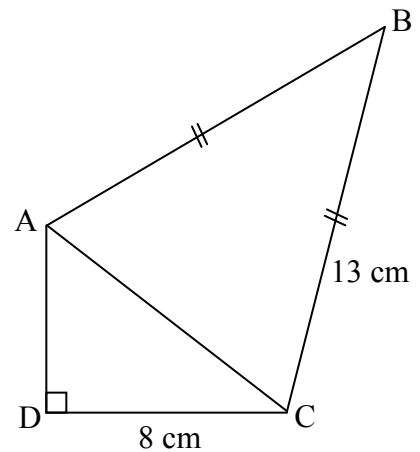
`=E4*0.8`

`=E4/0.8`

Ans. _____, _____

(7 marks)

12. ABCD is a quadrilateral in which $BC = 13$ cm and $DC = 8$ cm.
 $\triangle ABC$ is an isosceles triangle in which $AB = BC$.



- a) The perimeter of quadrilateral ABCD is 40 cm. Find the length of AD.

$$AD = \underline{\hspace{2cm}} \text{ cm}$$

- b) Find the area of $\triangle ADC$.

$$\text{area } \triangle ADC = \underline{\hspace{2cm}} \text{ cm}^2$$

- c) The area of quadrilateral ABCD is 84 cm^2 .
 Find the area of $\triangle ABC$.

$$\text{area } \triangle ABC = \underline{\hspace{2cm}} \text{ cm}^2$$

(6 marks)

END OF PAPER

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