DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION
Department for Curriculum Management and eLearning
Educational Assessment Unit
Annual Examinations for Secondary Schools 2011

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)

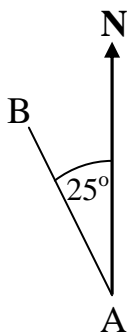2.   Convert $\frac{3}{5}$ to a percentage.

Ans. _____

_____ (1 mark)

3.   Estimate the value of:

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

Ans. _____

_____ (2 marks)

4.
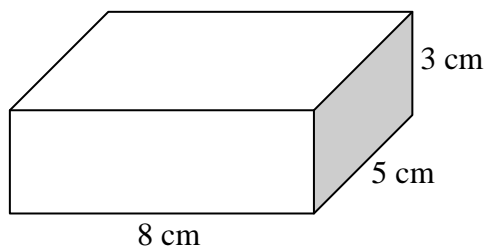
The bearing of B from A is _____°.

_____ (1 mark)

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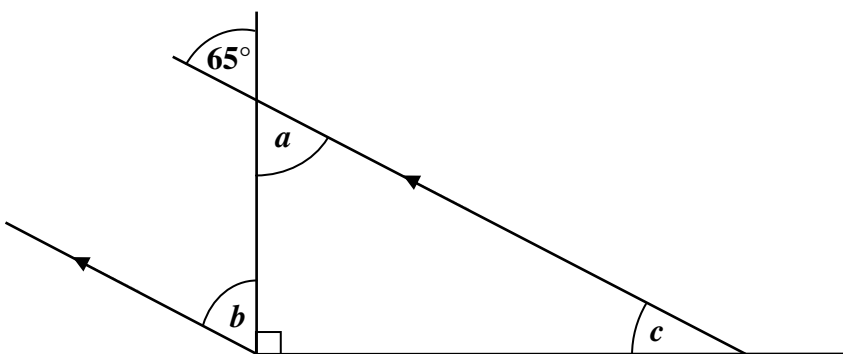
$x =$ _____

(2 marks)

6. Calculate the total surface area of the cuboid.

3 cm

5 cm

8 cm

surface area = _____cm^2

(3 marks)

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

65°

a

b

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

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| **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

$$\downarrow$$

—+——+——+——+——+——+——+——+——+——+——+——+—
                        0   2
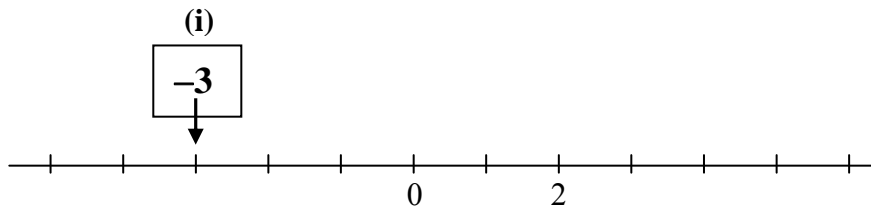
(i) −3   (ii) 1   (iii) 4.5   (iv) $-\dfrac{1}{4}$

(5 marks)

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

| **−2, 1, 6, 13, …** | **5, 8, 11, 14, …** | **3, 9, 15, 21, …** |

(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, _____   **5, 8, 11, 14, _____**   **3, 9, 15, 21, _____**

(5 marks)

Name: _____   **Class:** _____

3.   ABCD is a parallelogram. Angle ABC is $(2x + 7)°$ and angle BCD is $(5x – 2)°$.
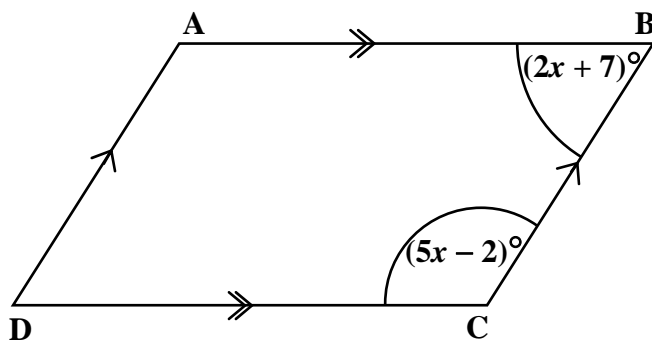
a)   Write an equation for the sum of the angles of parallelogram ABCD.
       Give your answer in terms of x.

b)   Find the value of x.

$x =$ _____

c)   Find the value of:

       (i) $\angle ABC$

$\angle ABC =$ _____$°$

       (ii) $\angle BCD$

$\angle BCD =$ _____$°$

                                                                                  (8 marks)

4. Joe drives a total distance of 1316 km. He drives $\frac{1}{4}$ of the distance on M

On Tuesday he drives 521 km. Joe drives the rest of the distance on Wednes
What distance did Joe drive:

a) on Monday?

Monday = _____ km
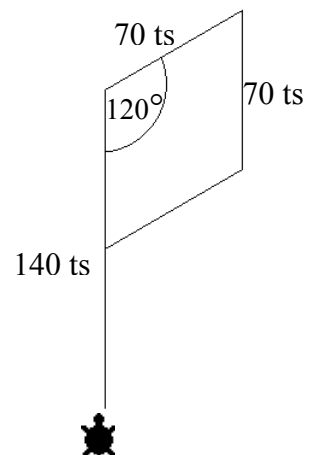
b) on Wednesday?

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**.

70 ts

120°   70 ts

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

140 ts

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

a)   On the given line mark a point B such that AB = 8 cm.

b)   Draw AC such that ∠A = 90° and AC = 6 cm. Join BC.

c)   Measure ∠B.   ∠B = _____°

d)   Draw the bisector of ∠B and let it cut AC at P.

e)   Measure AP.   AP = _____ cm

                                                          (7 marks)

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

      a)   How much pocket money does:

            (i) Martina receive each week?

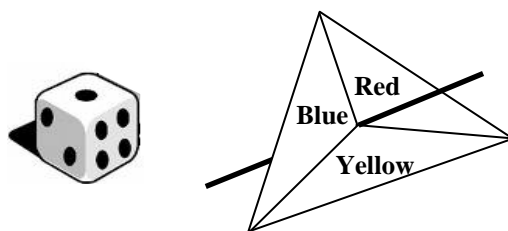   Martina: € _____

            (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 sh
      the diagram.

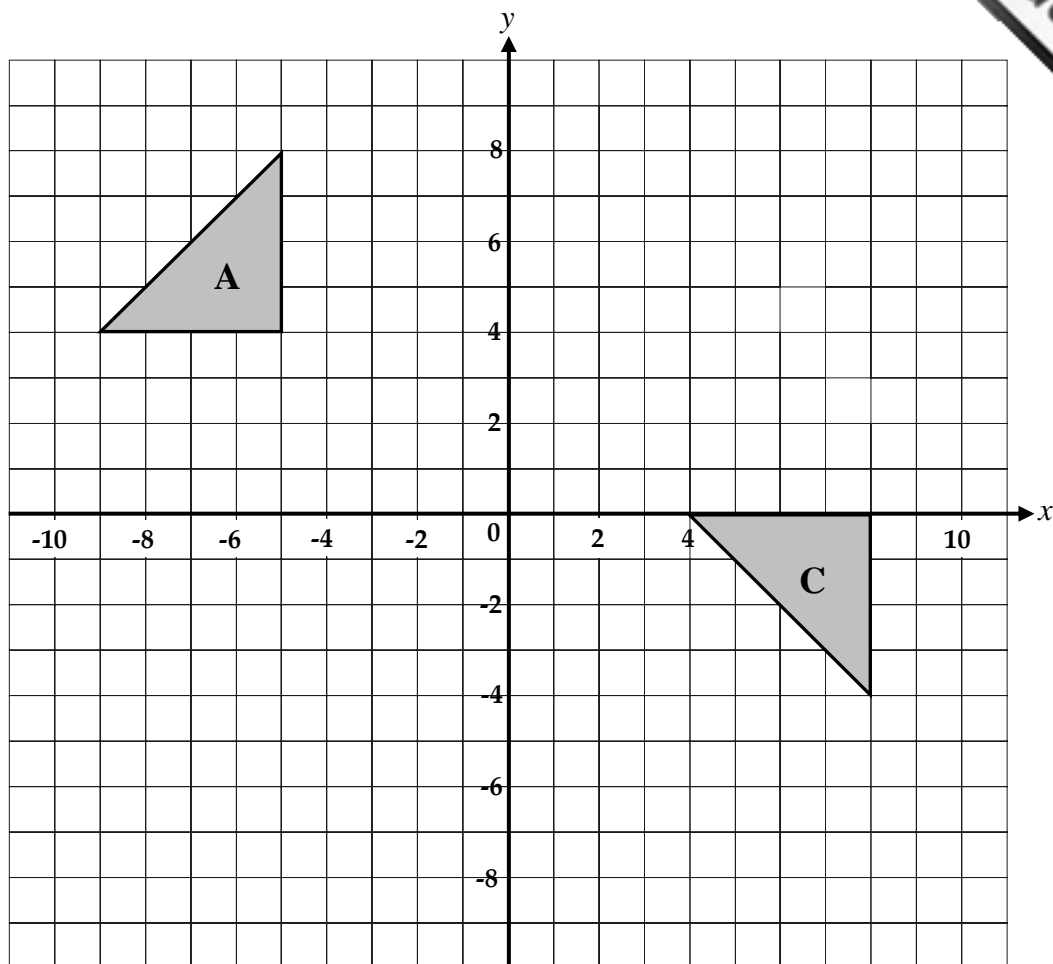a)   Complete the table below to show all the possible combinations.

	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?

      _____

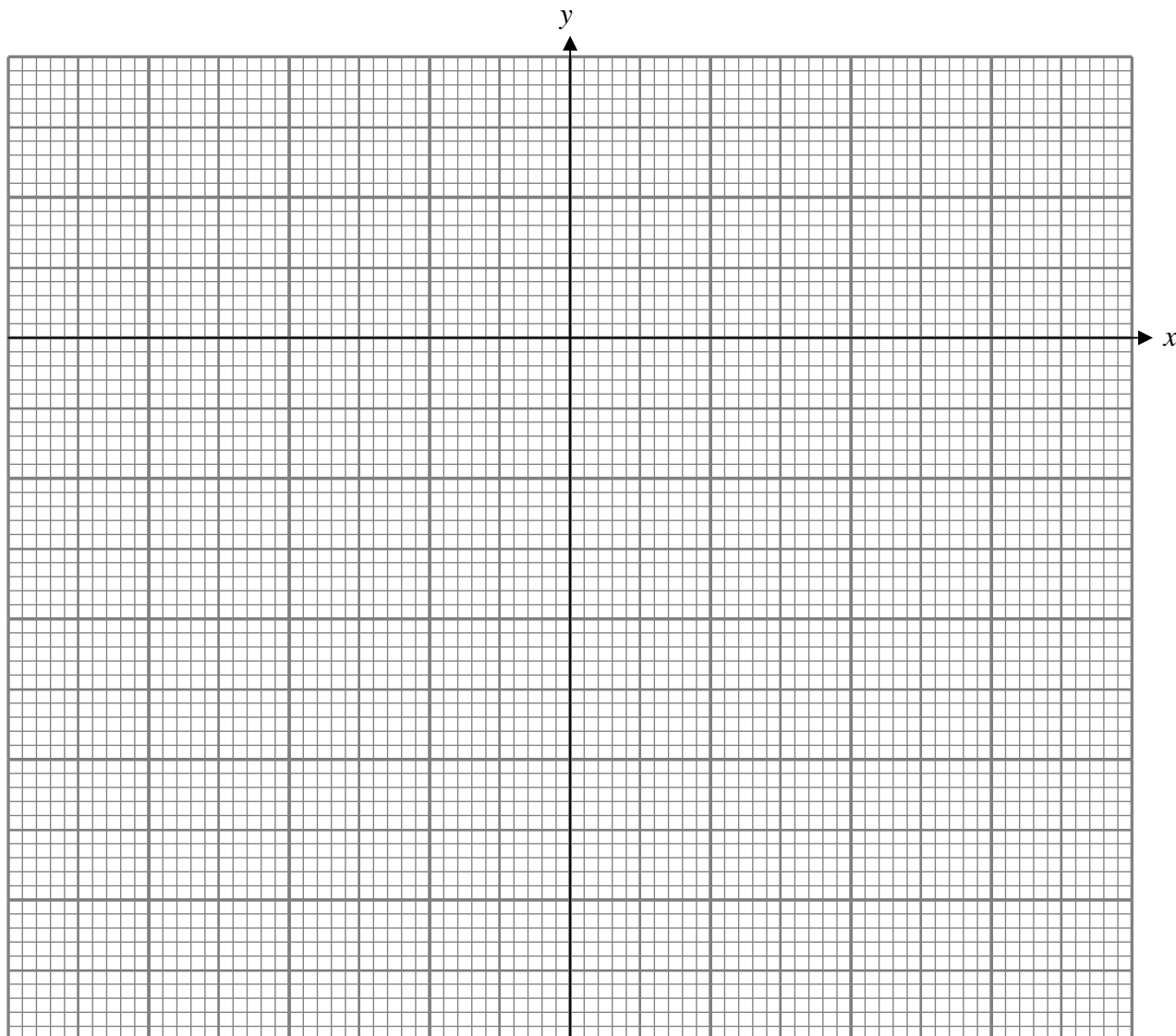   (5 marks)

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	–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 ... three sizes of tanks. Carl used a spreadsheet to work out the volume of e... fish tank in cm³.

	A	B	C	D	E	F
1		Length in cm	Breadth in cm	Height in cm	Volume of tank in cm³	Volume of water in cm³
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**? _____
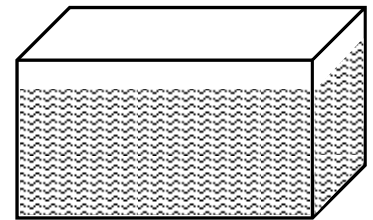
c) (i) Carl decided to buy Fish Tank 3.
He filled 80% of the fish tank with water.
What volume, in cm³, of the tank is filled with water?

Ans. _____ cm³

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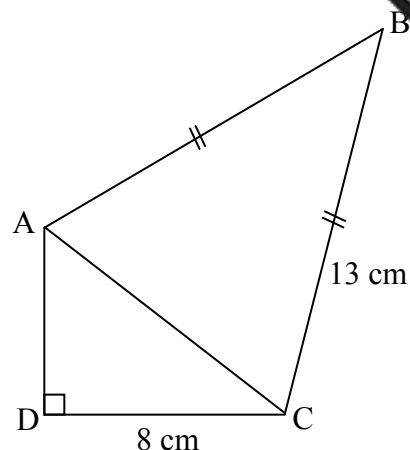Which two of the following formulae can Carl write in cell **F4**?

| =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.
ΔABC is an isosceles triangle in which AB = BC.

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

AD = _____ cm

b) Find the area of ΔADC.

area **ΔADC** = _____ cm^2

c) The area of quadrilateral ABCD is 84 cm^2.
Find the area of ΔABC.

area **ΔABC** = _____ cm^2

(6 marks)

END OF PAPER

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