

SECONDARY SCHOOL ANNUAL EXAMINATIONS 2009

Directorate for Quality and Standards in Education
Educational Assessment Unit



FORM 2

MATHEMATICS SCHEME B

TIME: 30 minutes

Non-Calculator Paper

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. Complete :

a) $2.6 \times \square = 26$

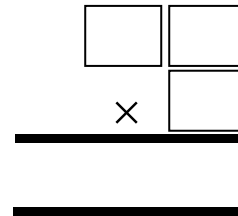
b) $0.08 \times 10^2 = \underline{\hspace{2cm}}$

c) $7.8 + 0.2 = \underline{\hspace{2cm}}$

d) $4.04 \div 2 = \underline{\hspace{2cm}}$

(4 marks)

2. Where must each of the digits $\square 2$, $\square 3$ and $\square 5$ be placed to give the **largest** answer for this multiplication?



(1 mark)

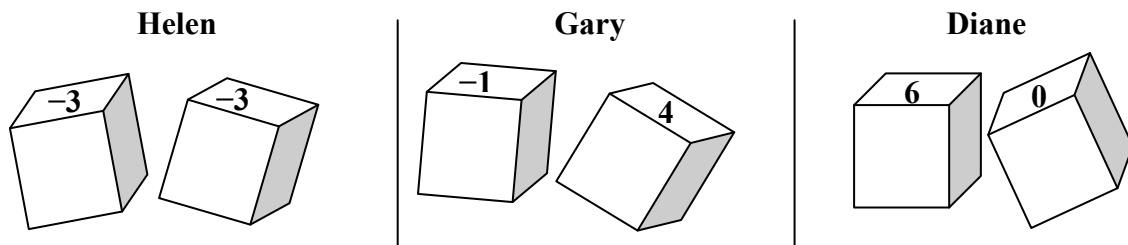
3. Work out: a) $7 \times (8 - 2)$

Ans:

b) Find the value of: $2(p - q)$ when $p = 10$ and $q = 6$.

Ans: (3 marks)

4.



Helen, Gary and Diane are playing a dice game.

In this dice game the numbers on the **top** faces are **multiplied** together to find the score.

a) What is their score?

(i) Helen's score $\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

(ii) Gary's score $\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

(iii) Diane's score $\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

b) Who gets the **highest** score?

Ans:

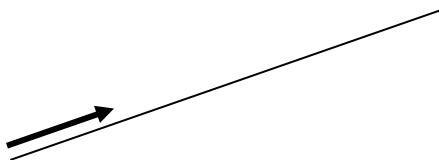
(4 marks)

5. a) Which of the following fractions are equivalent to $\frac{3}{4}$?

$$\frac{303}{304}, \quad \frac{75}{100}, \quad \frac{42}{56}$$

Ans: _____

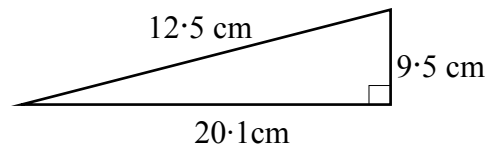
- b) The arrow is a **fraction** of the whole line. What is the fraction, in its **simplest** form?



Ans: $\frac{\square}{\square}$

(2 marks)

6. The **area** of this triangle is about _____



- (i) 200 cm^2 (ii) 100 cm^2 (iii) 180 cm (iv) 200 cm^3

(2 marks)

7. Fill in the missing numbers in the sequences.

a) Write four more **multiples of 5** greater than 20. _____ 30 _____ 50

b) Write four more **odd numbers** greater than 23. _____ 29 _____ 33 _____

- c) Norma thinks of a number.

- She says: (i) It is a **multiple of 5** greater than 20.
 (ii) It is also an **odd number** greater than 23.
 (iii) The **sum** of its digits is 8.

What is her number?

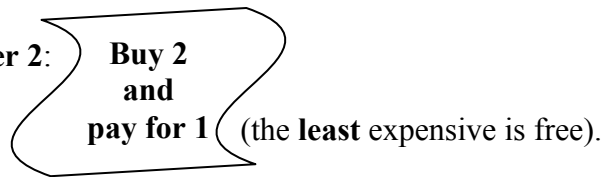
Ans: _____

8. A shop has two special offers this week.

Offer 1:



Offer 2:



Ms Delia needs to buy 2 pairs of shoes. These cost €34 and €36.

(a) How much will Ms Delia **save** if she chooses **Offer 1**?

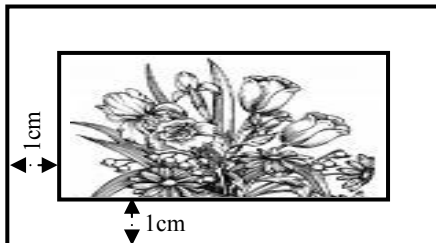
Ans: _____

(b) Which is the better offer, **Offer 1** or **Offer 2**?

Ans: Offer _____

(2 marks)

9.



A picture 8 cm long and 4 cm wide has a frame 1 cm wide.

What are the outer dimensions of the frame?

Length = _____ cm Width = _____ cm.

(2 marks)

10. Kurt is practising for a long jump competition.

His last five jumps were 2.36 m, 2.50 m, 2.46 m, 2.47 m and 2.51 m.

a) What is the **mean** length for these jumps?

Ans: _____

b) What is the **median** length for these jumps?

Ans: _____

(2 marks)

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FORM 2

MATHEMATICS SCHEME B

TIME: 1h 30min

Main Paper

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total Main	Non Calc	Global Mark
Mark																			

DO NOT WRITE ABOVE THIS LINE

Name: _____

Class: _____

- Answer all questions.
- This paper carries 75 marks.
- Calculators and mathematical instruments are allowed but all necessary working must be shown.

1. It helps to **use a calculator** in this question.

a) Which of the following is a square number?

- (i) 161 (ii) 225 (iii) 1689

b) Work out:

(i) $17^3 =$ _____

(ii) $\frac{5}{8} + \frac{9}{20} =$ _____

(iii) $(4 \cdot 15 - 2 \cdot 25)^2 =$ _____

(4 marks)

2. a) Divide the line into 2 parts in the ratio of 1 : 3.



- b) The ratio of **home** supporters to **away** supporters at a football match is **6:1**. There are 18000 **home** supporters. What is the number of **away** supporters?

Ans: _____

- c)  What **fraction** of the square is shaded?

Ans: _____

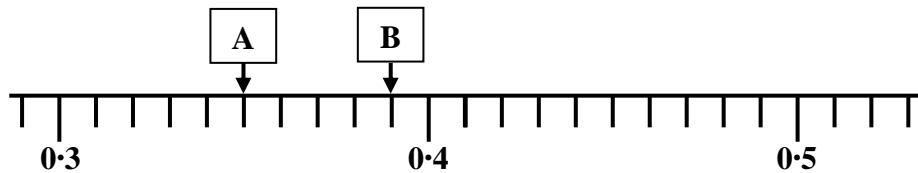
(3 marks)

3. a) **Three** of these numbers are **between 2.3** and **3.2**. Which are they?

2.31 **3.23** **2.36** **3.22** **2.03** **3.02**

Ans: _____

- b)



- (i) What decimal **numbers** are shown by the arrows on the number line?

A = _____ **B** = _____

- (ii) **C** = **0.43**. Show this number on the above **number line**.

- (iii) **Round** the number **B** correct to 1 decimal place.

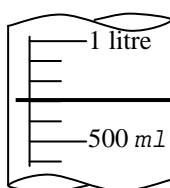
Ans: **B** = _____ (correct to 1 d.p.)

(5 marks)

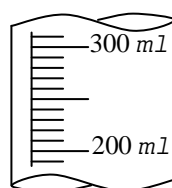
- 4.

Party Fruit Punch			
700 ml	ginger ale	280 ml	sugar syrup
280 ml	strong tea	160 ml	lemon juice
560 ml	orange juice	lemon slices	

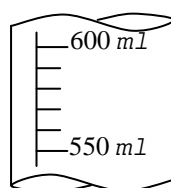
Mark the volumes of the ingredients for this Fruit Punch **in the measuring jugs**. The first one is done for you.



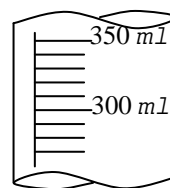
ginger ale



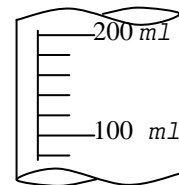
strong tea



orange juice



sugar syrup



lemon juice

(4 marks)

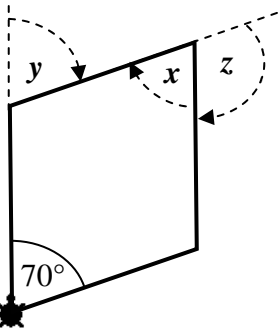
Name: _____

Class: _____

B

5.

This quadrilateral is a **rhombus**.



a) Find the marked angles:

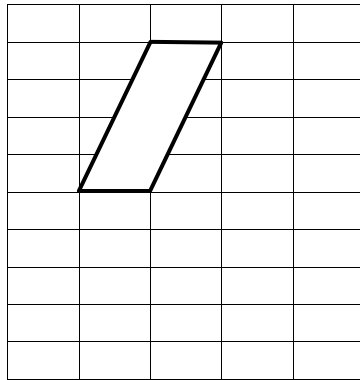
$x = \text{_____}^\circ \quad y = \text{_____}^\circ \quad z = \text{_____}^\circ$

b) Complete the repeat command in LOGO to draw the shape if each side is **50** turtle steps long.

PD REPEAT _____ [FD 50 RT ____ FD ____ RT ____]

(6 marks)

6.

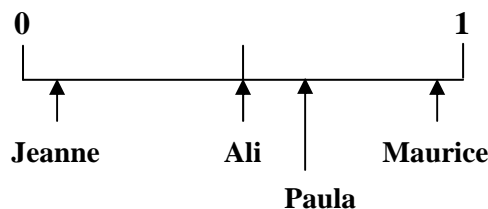


- a) The shape in the grid has _____ line/s of symmetry. (0, 1, 2, 3, 4)
- b) It has rotational symmetry of order ____ . (1, 2, 3, 4)
- c) Make a tessellation using this shape. (Draw at least 6 more shapes.)

(4 marks)

7.

a) The **probability** of four people going abroad these summer holidays is shown below.



- i) Who is **most likely** to be going abroad this summer? _____
- ii) Is Paula likely or unlikely to go abroad? Explain.

- iii) What is Ali's probability of going abroad? _____

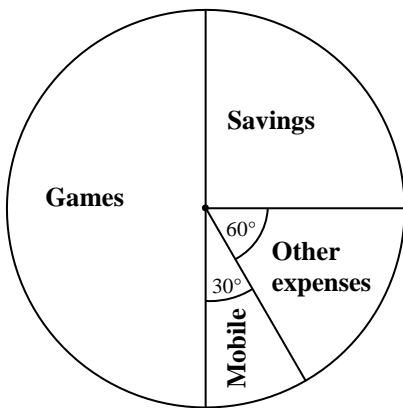
7. b) A bag contains counters of different colours: red, black, yellow and orange. Mona takes out a counter without looking. She records its colour and replaces it. She does this several times. These are her results:

Colour	Red	Black	Yellow	Orange
Frequency	7	3	8	5

- i) How many times in all does Mona draw a counter? _____ times.
- ii) From Mona's results, what is the **probability** that she draws a **black** counter?

_____ (5 marks)

8. The pie chart below shows how Michael uses his €24 pocket money.

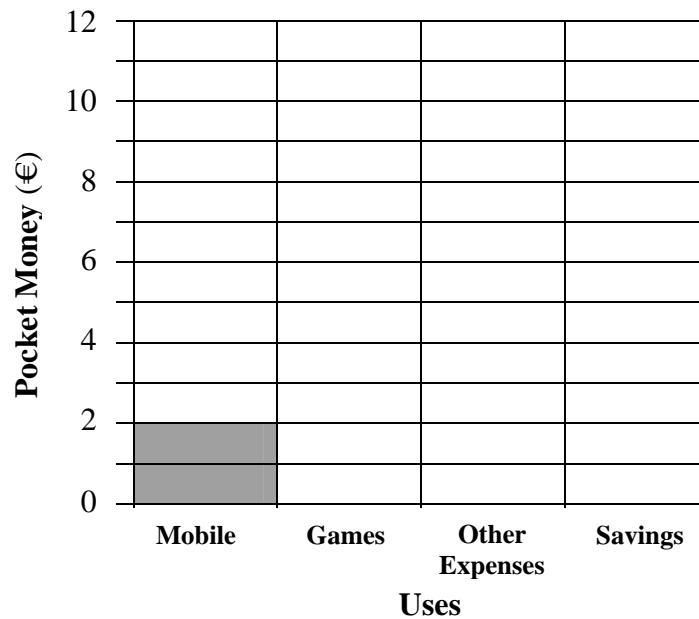


- a) How **much** does he spend on **games**? € _____

- b) What **fraction** does he **save**?

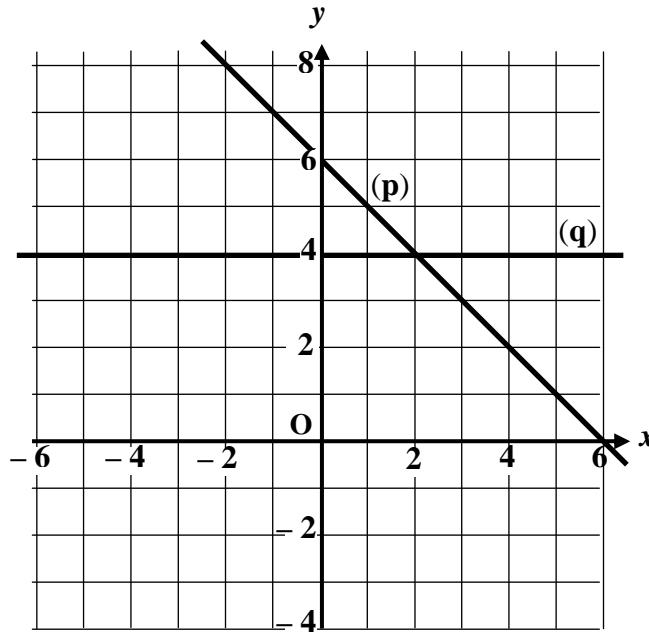
$$\frac{\square}{\square}$$

- c) Michael shows how he uses his €24 pocket money on a bar chart. Complete the bar chart.



(4 marks)

9. Line (p) and line (q) are shown in the grid below.



- a) Complete the **coordinates** of the points that lie on **line (p)**. (1 , 5) (4 , ___) (___, 0)
- b) Complete the **equation** of **line (p)** using **x** and **y**. _____ = 6
- c) Write the coordinates of any 2 points that lie on **line (q)**. (___, ___) (___, ___)
- d) Write the coordinates of the point where **line (p)** and **line (q)** meet. (___, ___)

(7 marks)

10. Patrick is 8 years old and his sister Anna is 4 years **older**.

- a) Write and **simplify** the **ratio** of Patrick's age to Anna's age.

$$\begin{aligned}
 &\text{Patrick : Anna} \\
 &\underline{\quad\quad} : \underline{\quad\quad} \\
 = &\underline{\quad\quad} : \underline{\quad\quad}
 \end{aligned}$$

- b) Uncle John gives them €100 to share in the **ratio of their ages**.

How much does **Patrick** receive?

€ _____

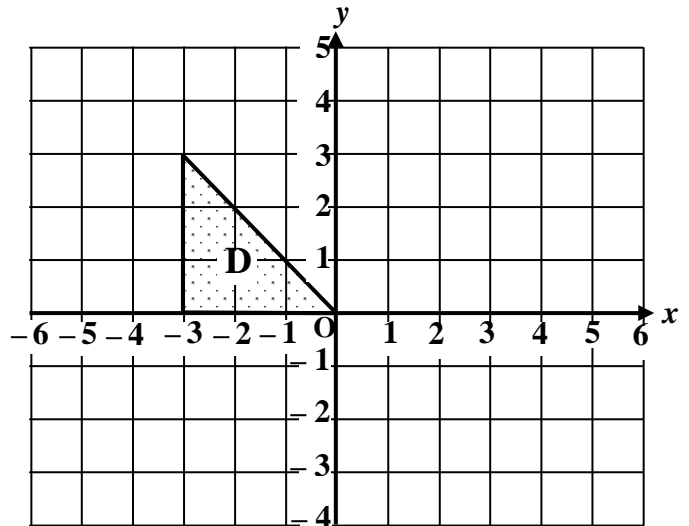
(5 marks)

11. a) Describe triangle **D** using **two** of the following terms:

Acute-angled	Obtuse-angled	Right-angled
Isosceles	Equilateral	Scalene

Triangle D is:

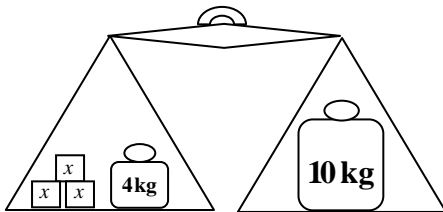
_____ and _____



- b) Reflect triangle **D** in the y axis. Label it **E**.
- c) **Rotate** the triangle **D** about O through 180° . Label it **F**.
- d) Translate triangle **D**, **3 down**. Label it **G**.

(4 marks)

12.



- a) Sandra is weighing some tins, using scales. The tins weigh x kg each.

Which equation represents the scales shown? (It helps if you remove brackets first.)

- (i) $4(x + 1) - x = 10$ (ii) $4(x - 1) = 10$
- (iii) $3x + 4x = 10$ (iv) $4x + 3 = 10$

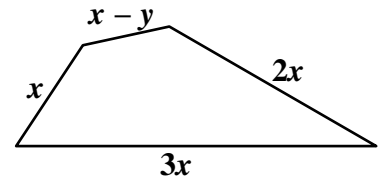
The right equation is _____

- b) Solve the equation: $3p - 5 = 2p + 6$

$p =$ _____

(4 marks)

13. a) Write down and **simplify** an expression for the **perimeter** of the quadrilateral.



- b) What is the perimeter when $x = 4$ cm and $y = 1$ cm?

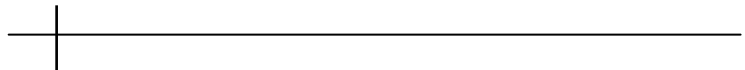
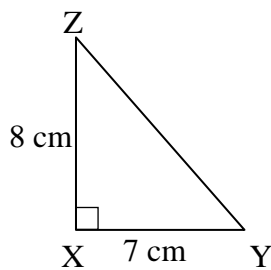
Perimeter = _____ cm

- c) Miriam said that when $x = 1$ cm, $y = 1$ cm. Is this possible? Explain.

Yes/No, _____.

(5 marks)

14. a) Using ruler and compasses only, make an accurate drawing of the triangle XYZ.



- b) Measure side YZ and angle Y

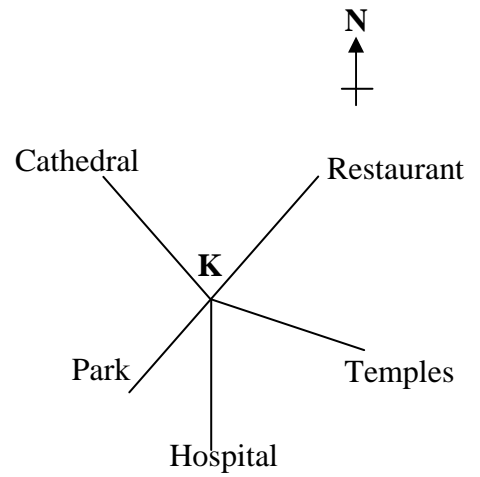
YZ = _____ cm angle Y = _____ °

(6 marks)

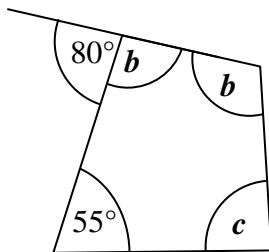
15. a) Karl is at point K.

(i) What does he see when he faces South West?

(ii) Write as a **three figure bearing** the position of the **hospital** from Karl.



b) Find the value of b and c in the diagram.

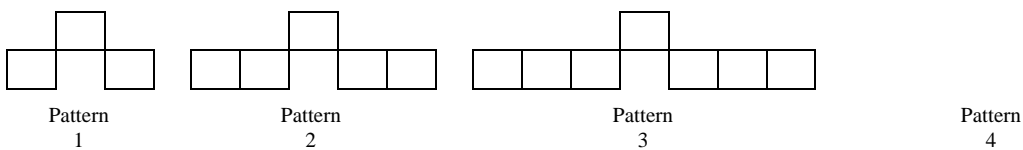


$b = \text{_____}^\circ$

$c = \text{_____}^\circ$

(6 marks)

16.



a) Draw pattern 4.

b) Continue: Each pattern has _____ rectangles more than the one before it.

c) How many rectangles will there be in the 6th pattern? _____ rectangles.

(3 marks)