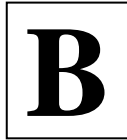


SECONDARY SCHOOL ANNUAL EXAMINATIONS 2010

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. Which of the following is the **nearest** answer to: $\frac{23.2 \times 19.64}{3.65}$?

- (a) 0.1 (b) 1 (c) 10 (d) 100 (e) 1000

_____ (1 mark)

2. Fill in with the unit which **best** describes the following:

(i) A bottle of mineral water holds 2 _____. (cm, cm², cm³, *l*, *ml*)

(ii) The **area** of a football pitch is 1700 _____. (m, m², cm, cm², km²)

_____ (2 marks)

3. (a) Michael got 32 marks out of 50 in his geography test. What percentage is this?

_____ %

(b) Write these fractions in order, **smallest** first:

$$\frac{2}{3}, \frac{1}{2}, \frac{1}{4}$$

_____, _____, _____

(c) Express 240 as a product of its prime factors.

(d) Find the HCF of 30 and 45.

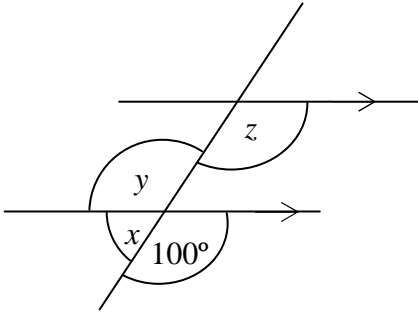
_____ (5 marks)

Name: _____

Class: _____

B

4. (a) Find the value of x , y and z .



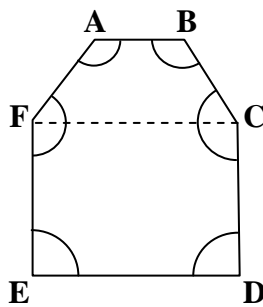
$$x = \text{_____}^\circ \quad y = \text{_____}^\circ \quad z = \text{_____}^\circ$$

(b) Divide €24 in the ratio of 1:3.

_____, _____

(5 marks)

5.



Fill in:

$$\angle A + \angle B + \angle C + \angle D + \angle E + \angle F = \text{_____}^\circ$$

(1 mark)

6. Brian records how long he takes to run round the school track.

1 st run	2 nd run	3 rd run
5 mins	4 mins 55 sec	4 mins 45 sec

What is the **range** of Brian's times?

(2 marks)

7. (a)



-20°C

Freezer A



-18°C

Freezer B



Refrigerator

(i) Which **freezer** is colder? _____

(ii) What is the **difference** in the temperatures between the two **freezers**?

_____ °C

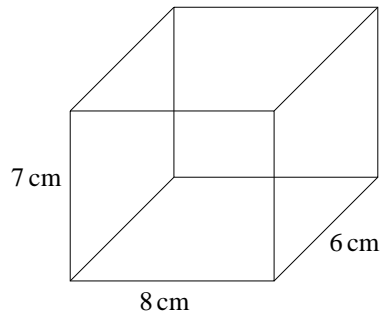
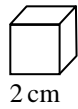
(iii) The temperature of the **refrigerator** is 30°C **higher** than that of **Freezer A**.
What is the temperature of the refrigerator?

_____ °C

(b) Find the value of $r + q^2$ when $r = 2$ and $q = -3$.

(5 marks)

8.



Roland wants to fit the **largest number of cubes** of side 2 cm into the big box.

(a) How many **cubes** he must use to cover completely the **base** of the box?

_____ cubes

(b) What is the **largest number of whole cubes** that he can fit in the box?

_____ cubes

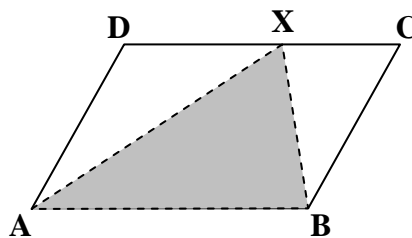
(2 marks)

9. A stamp costs 19c. How many stamps can I buy with €1?

_____ stamps

(1 mark)

10.



ABCD is a parallelogram.

Fill in using a fraction:

Area of triangle AXB = _____ Area of parallelogram ABCD

(1 mark)

SECONDARY SCHOOL ANNUAL EXAMINATIONS 2010

Directorate for Quality and Standards in Education
Educational Assessment Unit



FORM 2

MATHEMATICS SCHEME B

TIME: 1h 30min

Main Paper

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

DO NOT WRITE ABOVE THIS LINE

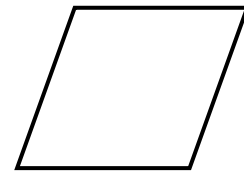
Name: _____

Class: _____

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

1. (a) This figure is a _____.

(trapezium, square, hexagon, cuboid, rhombus, kite)



(b) Fill in:

(i) The shape is _____ (regular, irregular, perpendicular).

(ii) It has _____ lines of symmetry.

(iii) It has rotational symmetry of order _____.

(3 marks)

2. (a) Change the units:

(i) Write 6 kg 200 g in kilograms. _____

(ii) Write 8 h 30 mins in hours. _____

(b) Find the total cost of 20ℓ and 400ml of petrol at 90 cent per litre.

(4 marks)

3. (a) Fill in the spaces of the sequences.

(i) 15, 21, 27, _____, 39.

(ii) $\frac{1}{6}$, $\frac{3}{5}$, $\frac{5}{4}$, $\frac{7}{3}$, _____

(iii) 2, 6, 18, 54, _____

(b) Underline the **TWO** statements which are **FALSE**:

(i) 5 is a prime number.

(ii) $5 > 0$.

(iii) 5 is a factor of 50.

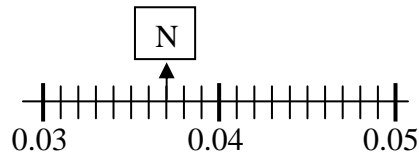
(iv) 5 is a multiple of 15.

(v) 5 is twice $2\frac{1}{2}$

(vi) 5 is 15% of 20.

(5 marks)

4. (a)



What number is shown marked by an arrow on the number line?

N = _____

(b)

(i) Write as **decimals**:

0.511×100

$\frac{12}{25}$

$\frac{300}{800}$

$0.82 \div 10$

(ii) Put in order of size, **smallest** first.

(c) Work out: $1\frac{3}{4} - \frac{5}{6}$

(4 marks)

Name: _____

Class: _____

B

5. (a) The diagram is part of a spreadsheet showing Monica's marks in five Mathematics tests.

	A	B
1	70	
2	82	
3	83	
4	90	
5	75	
6		mean

- (i) Which **formula** should Monica write in cell **A6** to find the **mean** mark?

$$= (A1 + A5)/5$$

$$= \text{SUM } A1 : A5/5$$

$$= \text{SUM } (A1: A5)/5$$

- (ii) What is her **mean** mark?

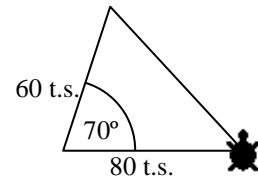
Mean mark: _____

- (iii) What is her **median** mark?

Median mark: _____

- (b) Fill in the missing LOGO command to draw the triangle below.
(t.s. stands for turtle steps)

PD LT 90 FD 80 _____ FD 60 HOME



(5 marks)

6. (a) Which of the following is equal to $3a$?

$$a + a + a$$

$$3 + a$$

$$a \times a \times a$$

- (b) Simplify:

$$2h - 4 + 3h + 7 =$$

- (c) Expand the brackets:

$$8(3r - 1) =$$

(5 marks)

7. One day Paul records the ages of the people entering a gymnasium.

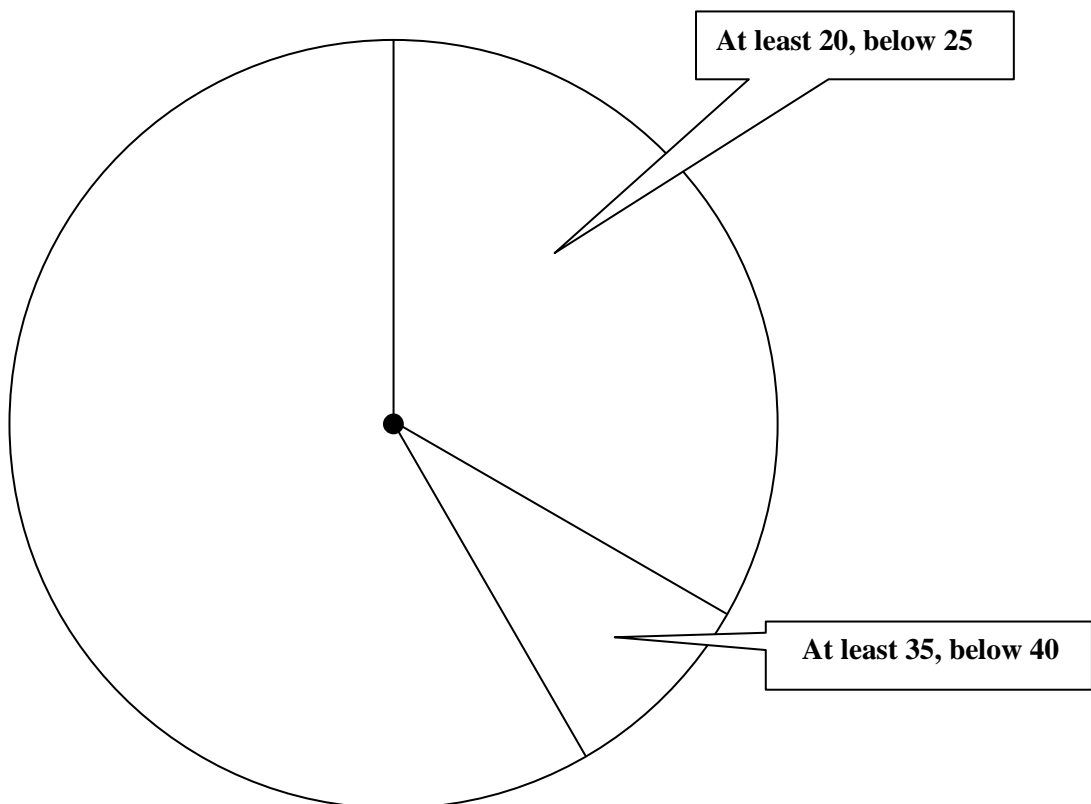
21	29	22	28	24	25
38	31	28	24	26	29

(a) Complete Paul's frequency table from the given data.

Age (in years)		Frequency	Angle in Pie Chart
At least	Below		
20	25	4	120°
25	30		
30	35		
35	40		30°
Total		12	360°

(b) What is the **probability** that a person entering the gym is **older** than 24 years?

(c) Complete and **label** the pie chart.



(6 marks)

Name: _____

Class: _____

B

8. (a) Solve

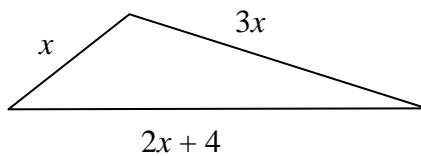
(i) $\frac{x}{4} = 12$

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

(ii) $6k - 1 = 29$

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

(b) (i) Write and **simplify** an expression for the **perimeter, P**, of the triangle.



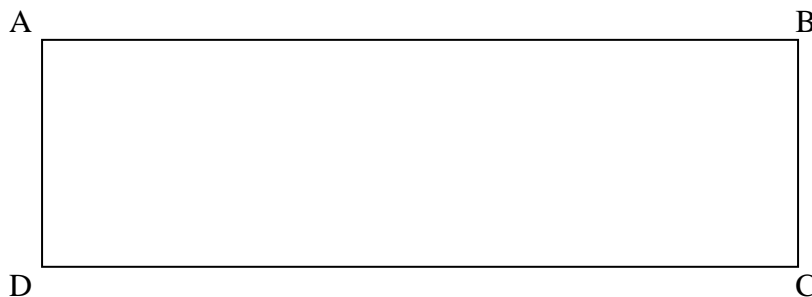
P = _____

(ii) Work out the value of x when the **P** = 22 cm.

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

(8 marks)

9. (a) Mr Abela makes this scale drawing to show a plot of land.

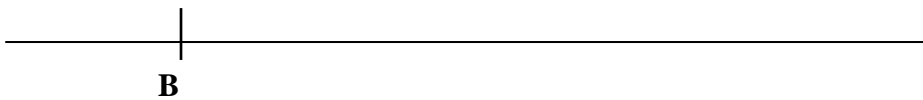


Scale
1 cm : 2 m.

(i) The length of AB is _____ cm

(ii) The **real** length of the plot of land is _____ m

9. (b) In this question all construction lines must be shown.
Use ruler and compasses only.



- (i) On the given line, mark point C such that $BC = 8\text{ cm}$.
- (ii) Construct and label triangle ABC such that angle $B = 90^\circ$ and $AB = 6\text{ cm}$.
- (iii) Measure AC and give the answer correct to the nearest mm.

AC = _____

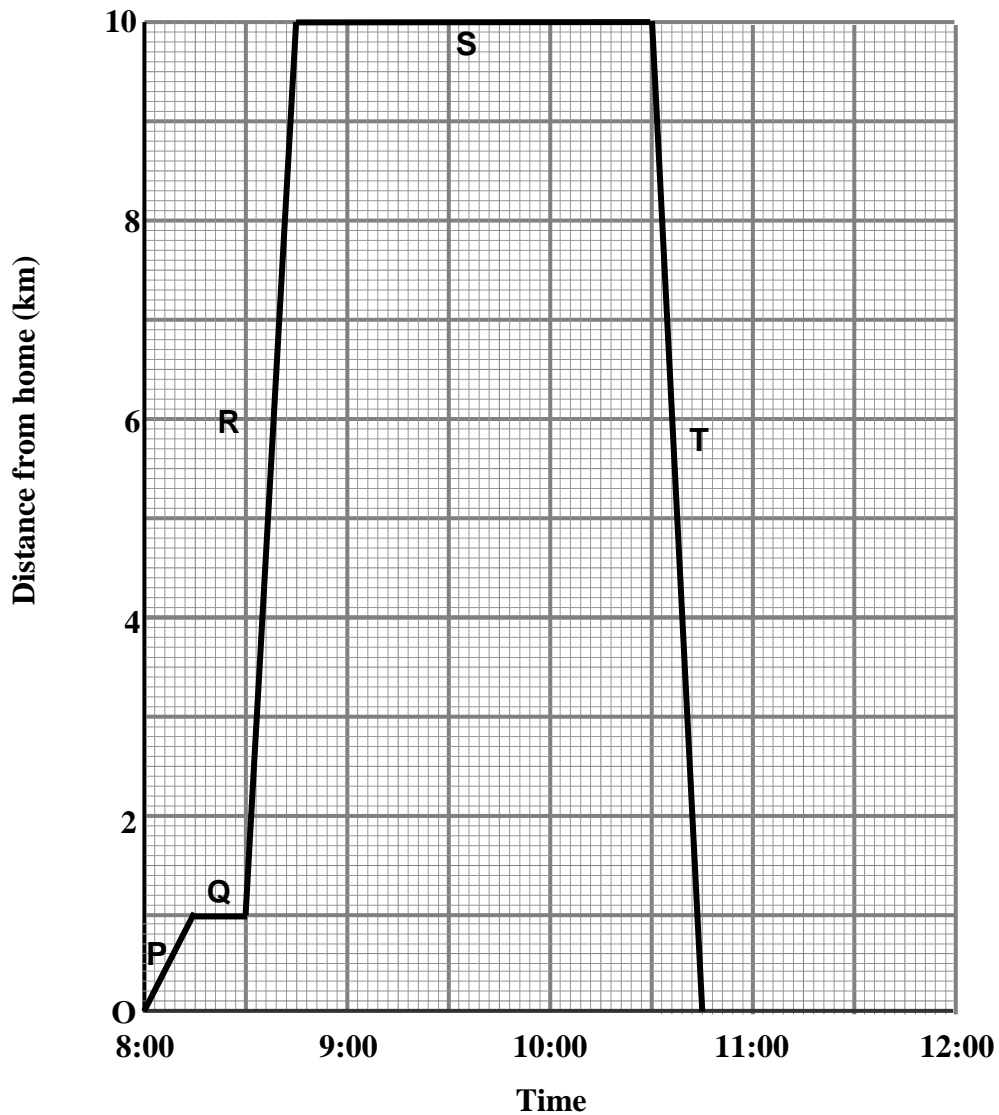
- (iv) Calculate the area of triangle ABC.

Area of $\triangle ABC =$ _____

(9 marks)

10. The graph shows Kyle's journey last school holiday.

He walks from home to the bus stop and then takes the bus to the gymnasium and travels back home again.



(a) How **far** from home is the bus stop? _____

(b) How **long** does Kyle stay at the gym? _____

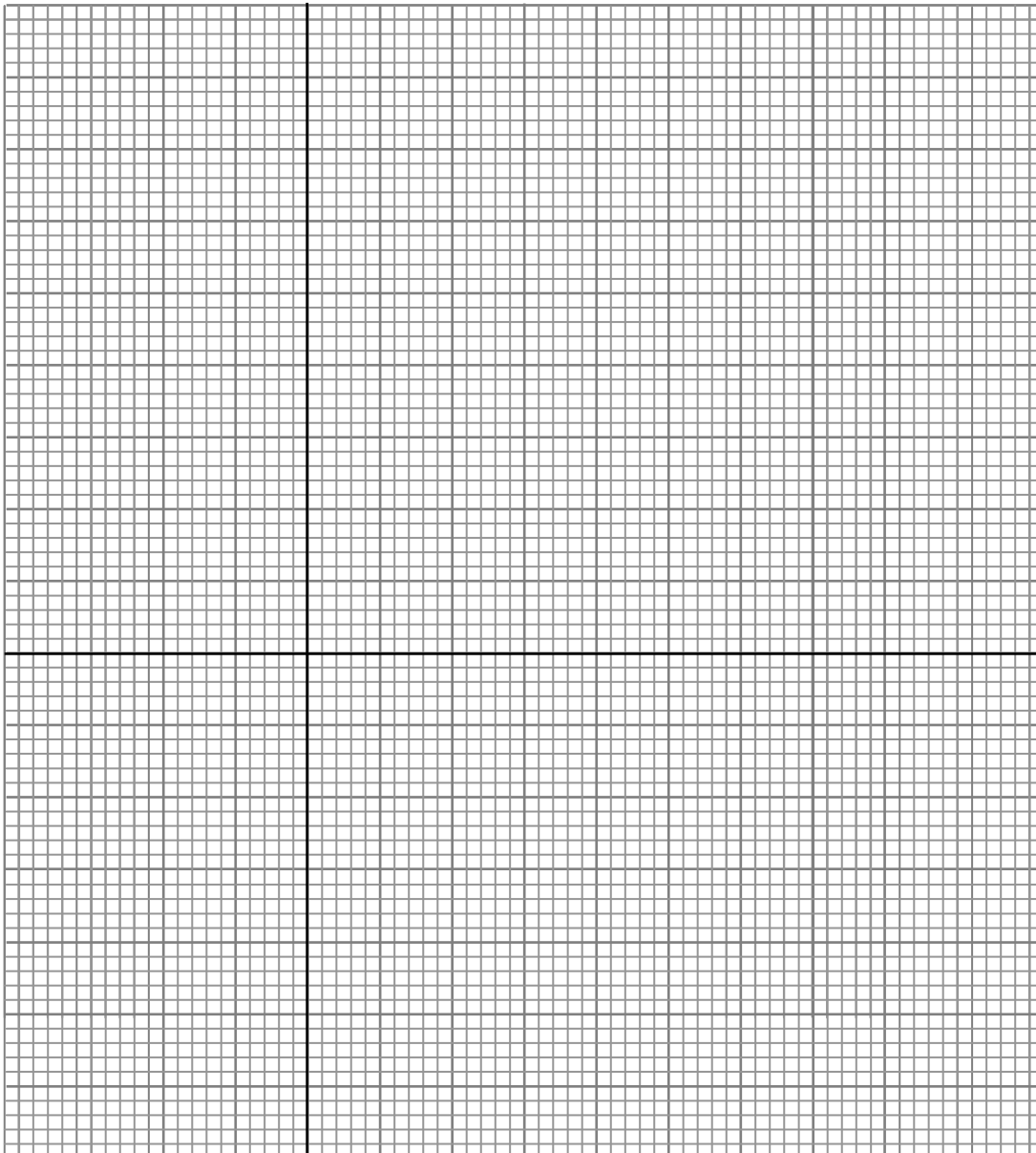
(c) Which is the **fastest** part of the journey: P, Q, R, S or T?
Explain.

(4 marks)

11. (a) Complete the table for the straight line graph of $y = 3x - 4$.

x	-1	0	2	4
$3x$	-3			
-4	-4	-4	-4	-4
y	-7		2	8

(b) Draw the graph $y = 3x - 4$.



(c) Use your graph to find the value of y when $x = 3$.

$y =$ _____

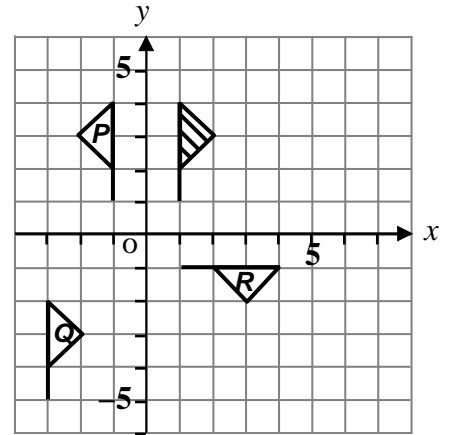
(8 marks)

12. **Choose** your answers from the table below to describe **fully** the transformation which maps:

(a) the shaded flag onto flag **P**.

(b) the shaded flag onto flag **Q**.

(c) the shaded flag onto flag **R**.

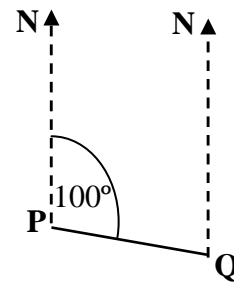


Translation	Rotation	Reflection	4 right	in y axis
about origin	4 left	90° clockwise	90° anti clockwise	6 down

(7 marks)

13. (a) (i) What is the bearing of Q **from** P?

(ii) **Mark** point R on the diagram such that R is on a bearing of 045° **from** Q.

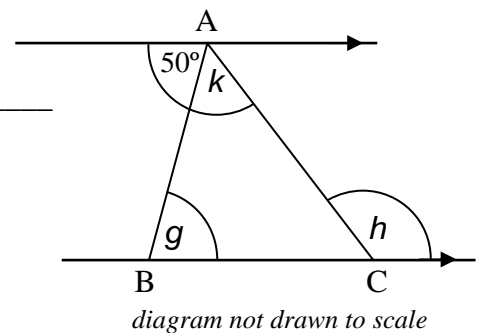


(b) (i) Find the size of the angle marked **g**.

$g =$ _____ ° Reason: _____

(ii) When $k = g$ which 2 **sides** of triangle ABC must be equal?

_____ = _____



(iii) Find the size of the angle marked **h** when $k = g$.

$h =$ _____ ° Reason: _____

(7 marks)

END OF PAPER