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: $\dfrac{23.2 \times 19.64}{3.65}$?

    (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, cm^2, cm^3, ℓ, $m\ell$)

    (ii) The **area** of a football pitch is 1700 _____. (m, m^2, cm, cm^2, km^2)

    (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:

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

    _____ , _____, _____

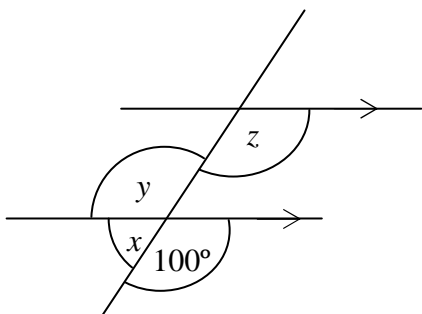   (c) Express 240 as a product of its prime factors.

    _____

    (d) Find the HCF of 30 and 45.

    _____

    (5 marks)

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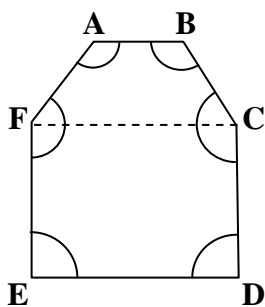

$x =$ _____$^{\circ}$ $y =$ _____$^{\circ}$ $z =$ _____$^{\circ}$

(b) Divide €24 in the ratio of 1:3.

_____, _____

(5 marks)

5.

Fill in:

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

(1 mark)

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

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

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

_____

(2 marks)

7. (a)

−20ºC   −18ºC

Freezer A   **Freezer B**   **Refrigerator**

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

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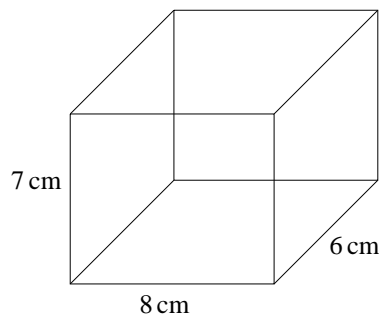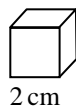
_____ ºC

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

_____ ºC

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

_____

(5 marks)

8.

7 cm

6 cm

8 cm

2 cm

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?
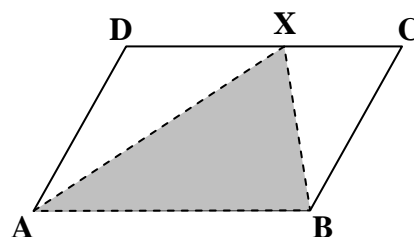
_____ cubes

(2 marks)

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

_____ stamps

(1 mark)

10.

D   X   C

A   B

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																

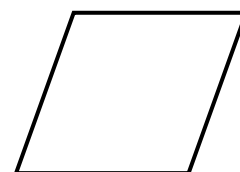**DO NOT WRITE ABOVE THIS LINE**

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 400$m\ell$ 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) $5 > 0$.
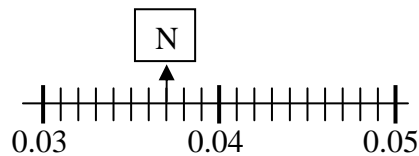
   (iii) 5 is a factor of 50.   (iv) 5 is a multiple of 15.

   (v)   5 is twice $2\frac{1}{2}$ (vi) 5 is 15% of 20.

<div align="right">(5 marks)</div>

4. (a)

N

0.03   0.04   0.05

   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: $1\frac{3}{4} - \frac{5}{6}$

                                              _____

<div align="right">(4 marks)</div>

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

     = SUM A1 : A5/5

     = SUM (A1: A5)/5

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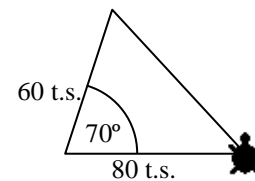
(ii) What is her **mean** mark?

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   60 t.s.

70°

80 t.s.

(5 marks)

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

     a + a + a   **3 + a**   **a × a × 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	120º
25	30		
30	35		
35	40		30º
	Total	12	360º

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

_____

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

At least 20, below 25

At least 35, below 40
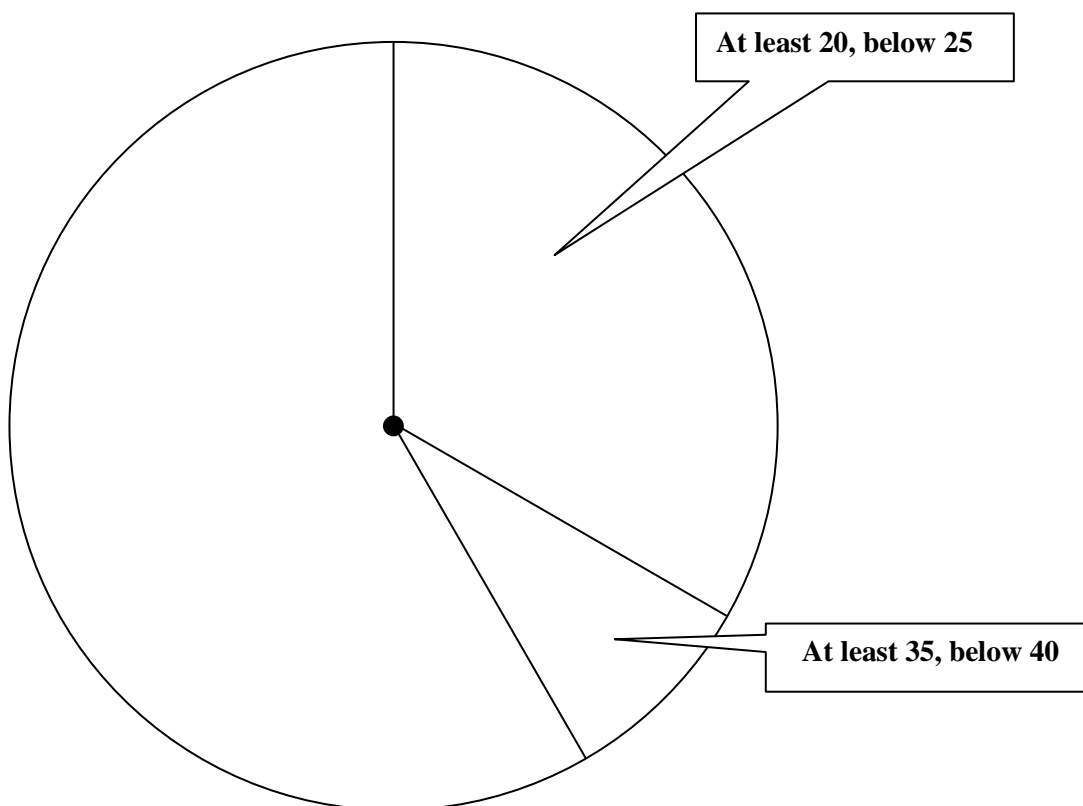
(6 marks)

Name: _____   **Class:** _____

8.   (a) Solve

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

$x =$ _____

   (ii) $6k - 1 = 29$

$k =$ _____

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

$3x$

x

$2x + 4$
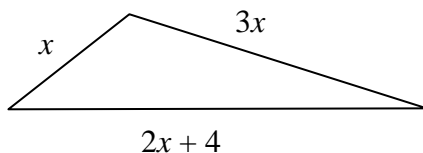
   P = _____

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

$x =$ _____ cm

(8 marks)

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

A   B

Scale
1 cm : 2 m.

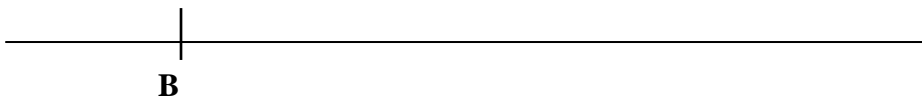D   C

   (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.

      B

      (i)   On the given line, mark point C such that BC = 8 cm.

      (ii) Construct and label triangle ABC such that angle B = 90° and AB = 6 cm.

      (iii) Measure AC and give the answer correct to the nearest mm.

                                                                AC = _____

      (iv) Calculate the area of triangle ABC.
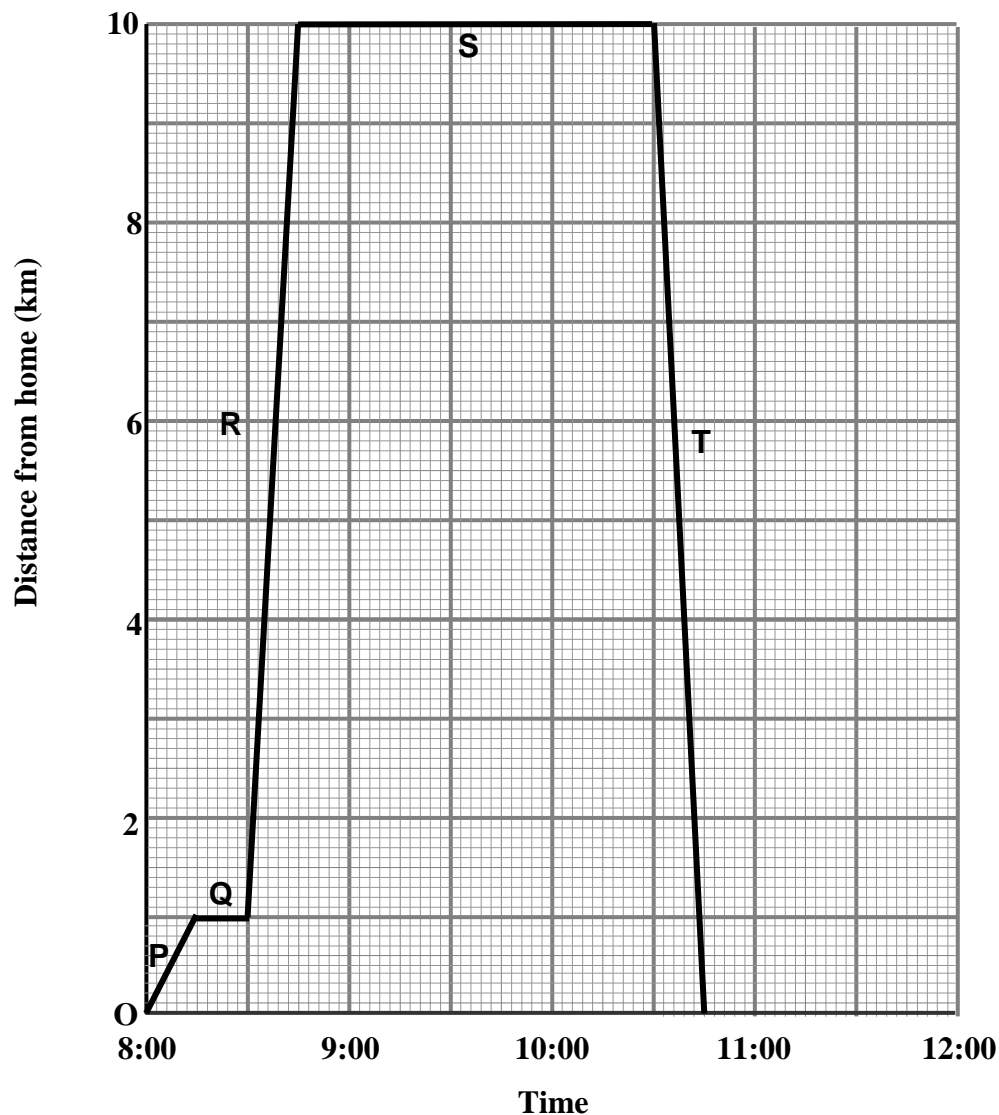
                                                    Area of △ABC = _____

                                                          (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 tra...

back home again.

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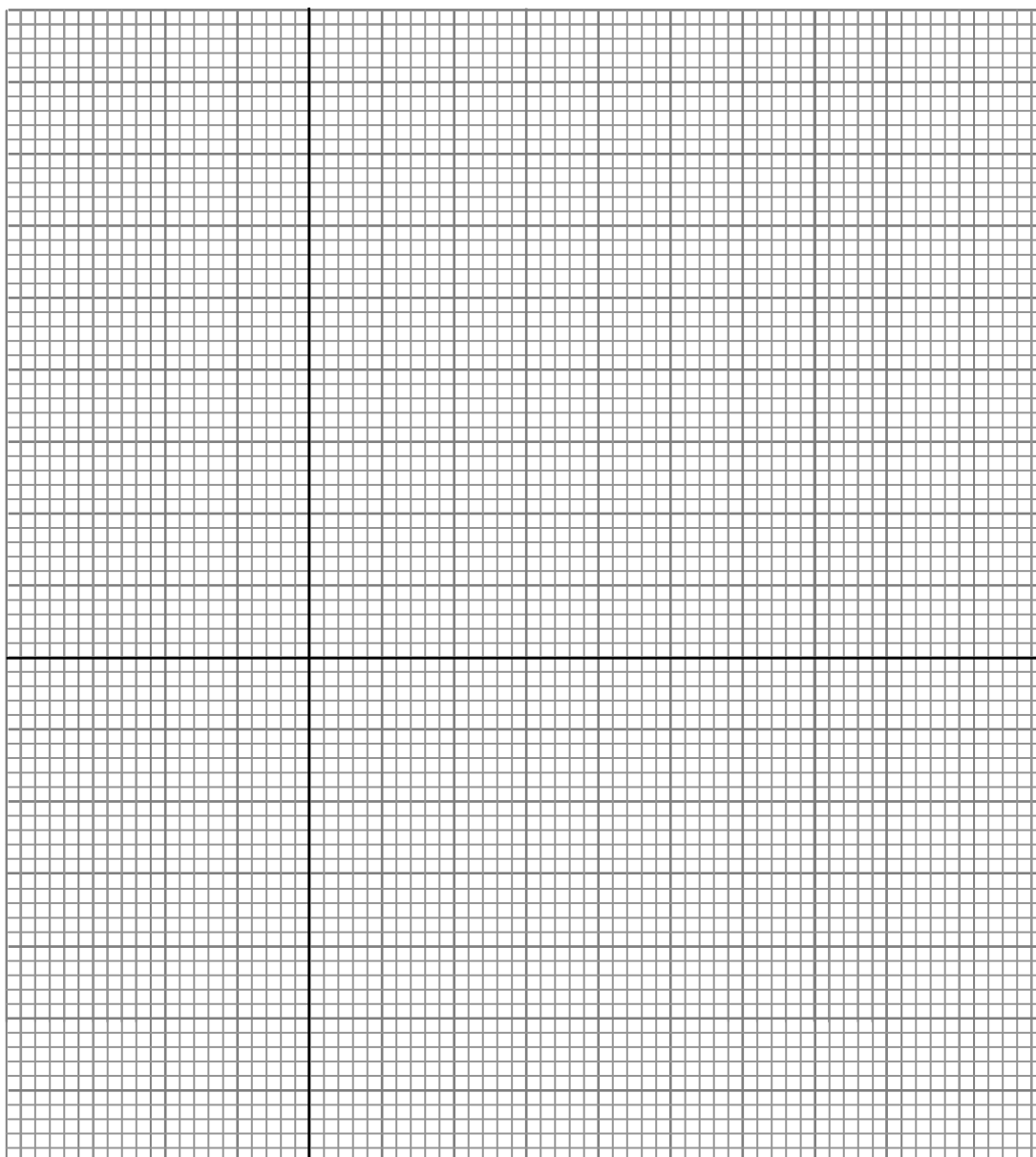
_____

(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 $y = 3x - 4$.

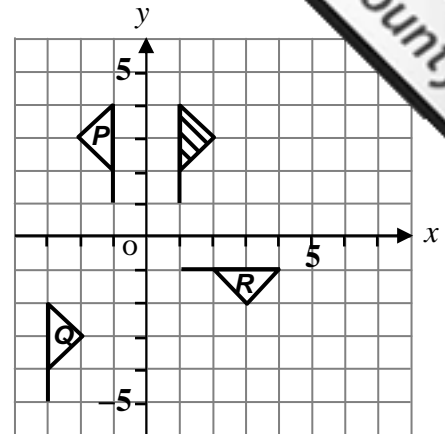(c) Use your graph to find the value of y when $x = 3$.

$y =$ _____

(8 marks)

12. **Choose** your answers from the table below to describe **fully** the transformation wh

(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?

_____

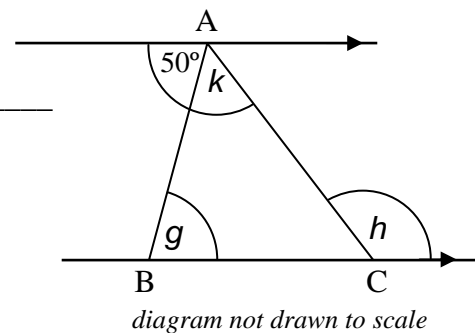(ii) **Mark** point R on the diagram such that R is on a bearing of 045° **from** Q.
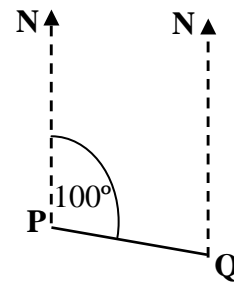
(b) (i) Find the size of the angle marked *g*.

g = _____° Reason: _____

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

_____= _____

diagram not drawn to scale

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

h = _____° Reason: _____

(7 marks)

END OF PAPER