DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION
Department for Curriculum Management and eLearning
Educational Assessment Unit
Annual Examinations for Secondary Schools 2013

Le
7-8

| **FORM 1** | **MATHEMATICS** | **TIME: 30 minutes** |

Non-Calculator Paper

Question	1	2	3	4	5	6	7	8	Total
Mark									

DO NOT WRITE ABOVE THIS LINE

Name: _____   Class: _____

Instructions to Candidates

- **Answer all questions.**

- **This paper carries a total of 25 marks.**

- **Calculators and protractors are NOT allowed.**

1.   A chocolate bar costs €1.45 and a cake costs 55cent.
     What change does Marvic get from €10 if she buys **4** chocolate bars and **4** cakes

55c

€1.45 CHOCO

Ans: _____
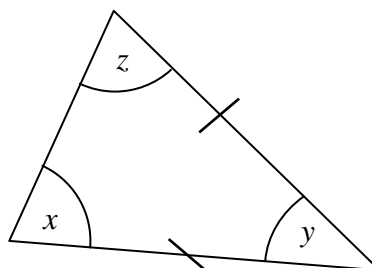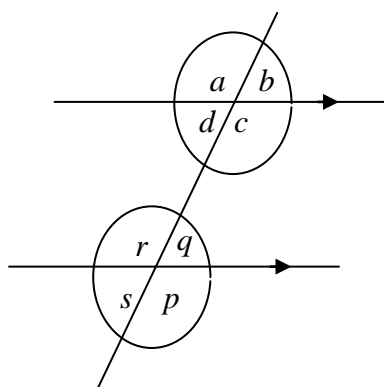   (2 marks)

2.   The temperature in a fridge is 4ºC and that in a freezer is −18ºC. How many degrees
     colder is the freezer?

Ans: _____ºC
                                                                (1 mark)

3.

     Look at the diagrams and tick (✓) the correct equations:

     (i) $a = c$ ☐

     (ii) $a = q$ ☐

     (iii) $s = d$ ☐

     (iv) $x = z$ ☐

                                                                (4 marks)

4. Work out:

a) How many **hundreds** are there in one million?

_____ hundreds

b) Anna lives 1.24 km away from school. What distance does she walk altogether to and from school during a normal **school week**?
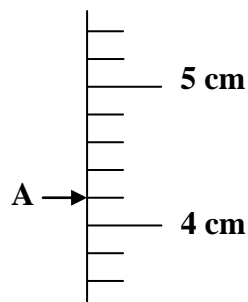
_____ km

c) [____] % of 200 = 100

d) Fill in with $<$ or $>$:

$$\left(\frac{1}{2}\right)^{2} \boxed{} \quad \frac{1}{2}$$

e)

5 cm

A →

4 cm

The arrow at **A** is pointing at:

_____ cm

(5 marks)

5. What number is 23 less than 23×91?

Ans: _____

(1 mark)

6. One morning Samuel decides to cover the whole school running track.

   He first runs $\frac{1}{8}$ of the track and then walks $\frac{1}{4}$ of it. He does this **twice**.

   a)   What **fraction** of the whole track has he covered **in all**?

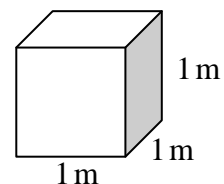   Ans: _____

   b)   The track is $\frac{1}{2}$ km long. How far is he from the finish line?

   Ans: _____m

   c)   Can he repeat the run and walk action **once** more so as to cover the track **exactly** once? Explain.

   (5 marks)

7. How many cubes of side 1 cm fit in a cube of side 1 m?

   1 m
   1 m
   1 m

   Ans: _____ cubes

   (2 marks)

8. Evaluate:

a) $4 + 0.4 + 0.004$

Ans: _____

b) $7 \times 10^2 + 1$

Ans: _____

c) $\sqrt{\dfrac{4}{9}}$

Ans: _____

d) $-3 \times (-2)$

Ans: _____

(5 marks)

END OF NON CALCULATOR PAPER

DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION
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LE
7 -

FORM 1	MATHEMATICS	TIME: 1h 30min
	Main Paper	

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

DO NOT WRITE ABOVE THIS LINE

Name: _____   **Class:** _____

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

1. a)   Fill in the missing terms in the following sequences.

   (i)   5,   9,   13,   17,   ____.

   (ii)   2,   3,   5,   8,   12,   ____,   ____.

   (iii) $\dfrac{1}{23}$,   ____, $\dfrac{4}{25}$, $\dfrac{8}{26}$, $\dfrac{16}{27}$,   ____.

   b)   Find the mystery number when:

   - it is **smaller** than 50,

   - it is a **square** number,

   - 4 is one of its **factors**,

   - it is a **multiple** of 3.

   Ans: The mystery number is _____

   (8 marks)

2. a) Last year Joel went for a holiday from 30 **July** till 1 **September**.
   How long was his holiday in days, if both days are included?

   Ans: _____ days

   b) (i) Bus K leaves the terminus every 20 minutes starting from 07:00.
      Janice arrives at the terminus at 07:25. How long will she wait for the next
      Bus K, if it leaves on time?

      Ans: _____ minutes

      (ii) How many of Bus K leave the terminus by 9:00 am?

      Ans: _____ buses
      (6 marks)

3. Lora and Daniel are **12** years old and **9** years old respectively.
   a) (i) Write the ratio of Lora's age to Daniel's age in its **simplest form**.

      Lora **:** Daniel

      _____ **:** _____

      (ii) When they visited him, Uncle Paul gave them money in the ratio of their
      ages. Lora received €20. How much did Daniel receive?

      Ans: €_____

   b) The height of a soft toy is 3 cm in a catalogue **picture**. What is its **actual** height
      if a scale of **1:10** is used?

      Ans: _____

      (4 marks)

4. a) Romina obtained the following marks last year: | 72   56   50   42   55 |
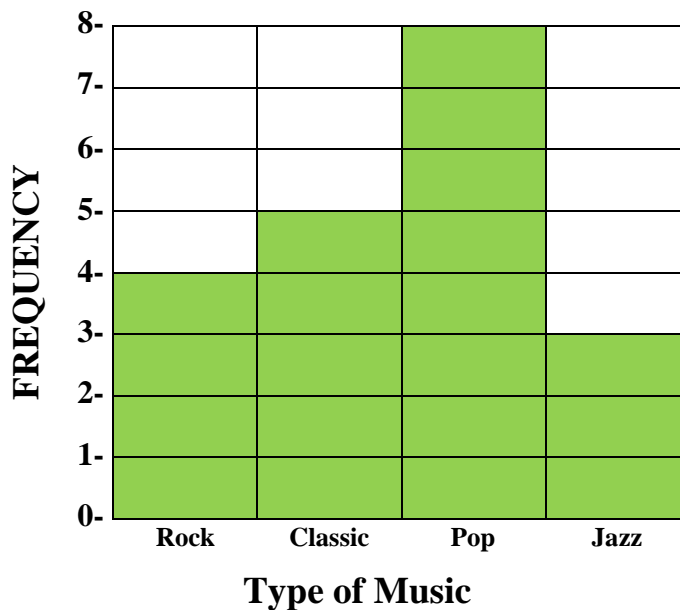
(i) Work out her **mean** mark.

Ans:_____ Mean mark

Her friend James obtained the following marks: | 56   66   71   52   42 |

(ii) He said, "My **median** mark is higher." **Show** if he is **correct** or **not**.

b) Mr Vella asks a group of boys which is their favourite music. The bar chart shows the result.

Type of Music

(i) How many boys took part in this survey?

Ans: _____

(ii) What is the **probability** that jazz is the favourite?

Ans: _____

(iii) Express the answer to (ii) above as a **percentage**.

Ans: _____ %

(7 marks)

5.
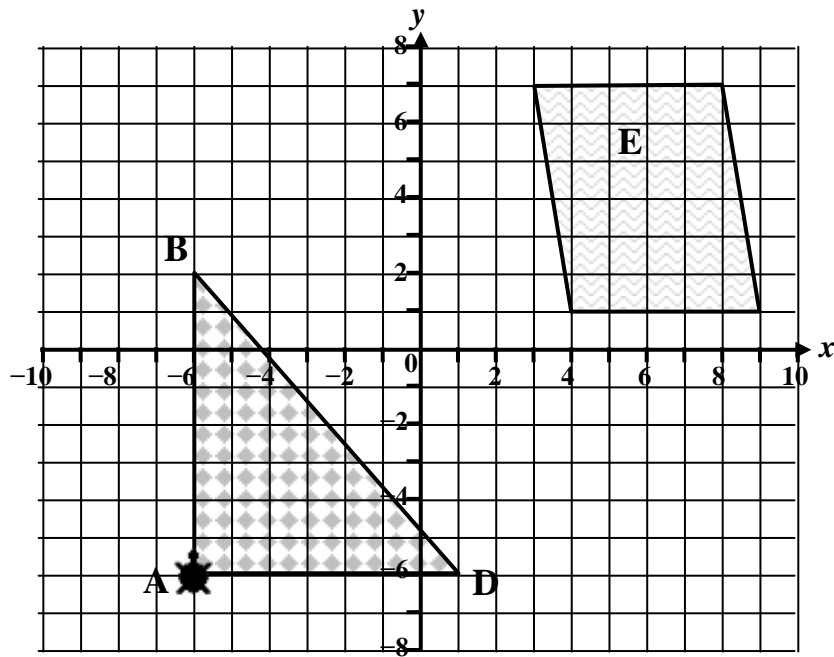
a) (i) Shape **E** is a parallelogram because it has_____.

(ii) Draw the diagonals of parallelogram **E**.

(iii) The diagonals meet at the point with coordinates (___ , ___).

b) (i) Describe triangle **ABD** choosing 2 types from below:

Equilateral, scalene, isosceles, acute angled, right-angled.

Ans: _____ and _____ triangle.

(ii) The **base** of triangle **ABD** is 7 units long. What is its **height**?

Ans: _____ units

(iii) Calculate the **area** of triangle **ABD**.

Ans: _____ square units

(iv) Fill in the spaces to write the coordinates of 4 points on side **AB**.
(The first one is done for you.)
(-6 , -5) (___ , -4) (___ , 0) (___ , ___)

(v) Write the **equation** of line **AB**.

Ans: ___ = _____

(vi) Plot a **fourth** point **C** to change the triangle into the rectangle **ABCD**.

Name: _____   **Class:** _____

c) Complete the Logo commands to trace rectangle **ABCD**.
   (Turtle is positioned at start and end.)
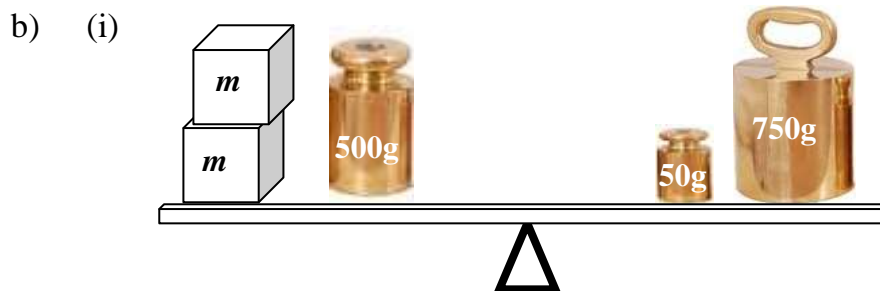
   PD REPEAT 2 [FD ____ RT 90 FD 7 ____ 90]

(15 marks)

6. a)

	Q		S		U
	$n + n + n + n$		$n \times n \times n \times n$		$3 + n$
P		R		T	
$5n - 1$		$n \times 4$		$n + 3n$	

Which **3** cards simplify to **4n**?

Ans: _____ _____ _____

b) (i)

Each cube weighs m grams. Write an **equation** to represent the scales.

Ans: _____

(ii) Solve the equation to find the weight of **one** cube.

Ans: $m =$ _____g

c) Simplify: $3(x + 4y) - 5y$

Ans: _____

(8 marks)

7.
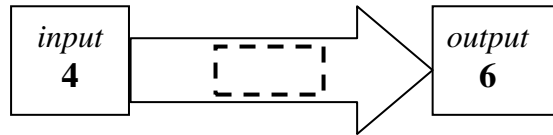
input
4

output
6

a)   Fill in a rule for the number machine shown above.

Now complete the rule using letters, taking *n* as input and **T** as output.

T = _____

b)

(i)   Ian takes a summer job. He is paid €5 for every hour he works plus €15 per week. Complete the number machine to show Ian's weekly pay, choosing from:

| × 15 | + 15 | × 5 | + 5 | + 20 |

Number of **hours** worked per week ⟶ [   ] ⟶ [   ] ⟶ Pay (€)
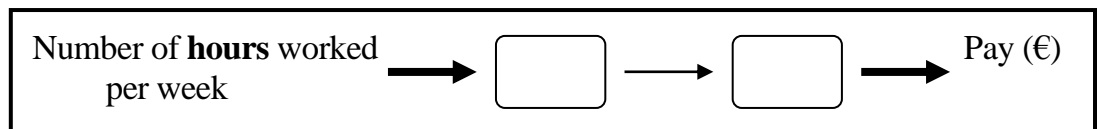
(ii)   Ian worked a total of **25 hours** last week. How much did he earn in all?

Ans: € _____

(iii) This week he aims to earn €150. How many hours must he work?

Ans: _____ hours

(7 marks)

8. Give **reasons** for your answer in every part of this question.
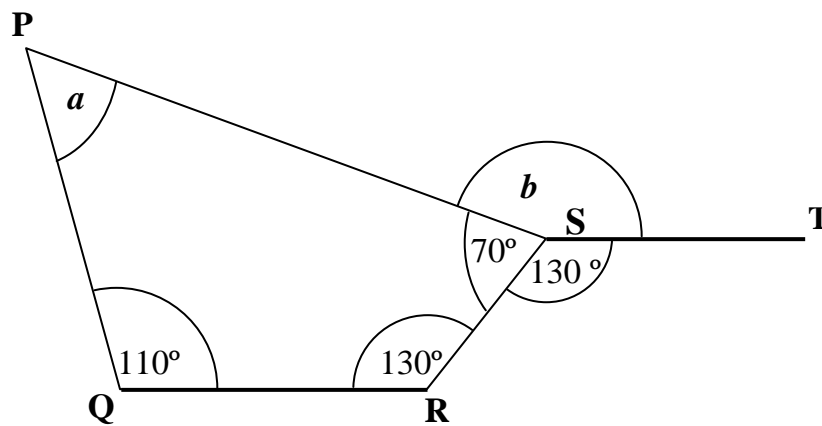
(Diagram not drawn to scale)

a) Work out the size of the angle marked *a*.

Ans: *a* = _____ ° reason: _____

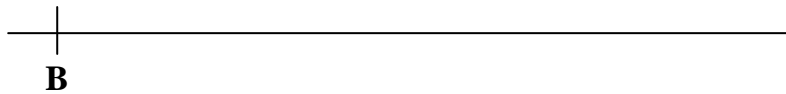b) Work out the size of the angle marked *b*.

Ans: *b* = _____ ° reason: _____

c) What can you say about straight lines QR and ST? Give a reason for
    your answer.

_____

_____

_____

(5 marks)

9. a) On the given line below, construct triangle ABC such that AB = 8
        BC = 8 cm and angle B = 100º. Label your diagram.

```
        ─┼──────────────────────────────
         |
        B
```
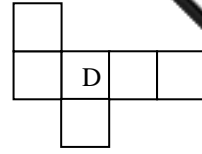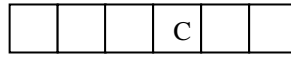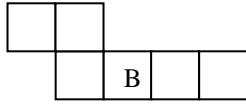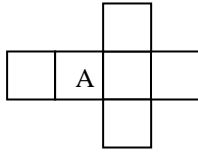
    b) On your diagram mark point O, the **midpoint** of AB.

    c) With **centre** O and **radius** 4 cm, draw a **circle** to cut AC at X.

        Label point X on your diagram.

    d) Measure and write down the **length** of BX correct to the nearest mm.

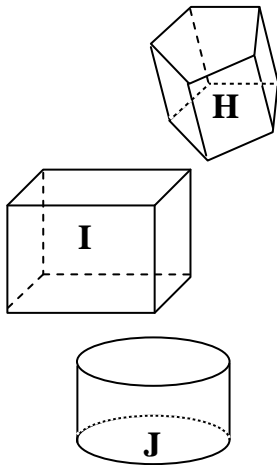   **Ans**: BX = _____

                                                            (8 marks)
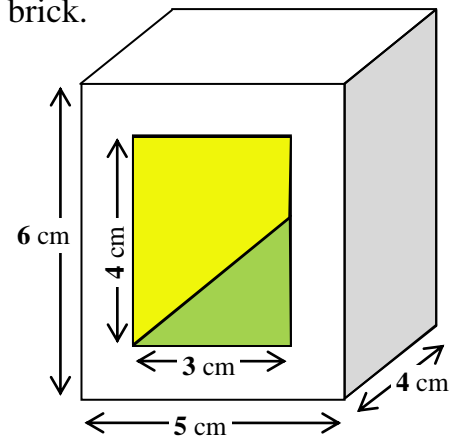
10. a) Which of these **are** nets of a closed cube?

A

B

C

D

Ans: _____

b) Fill in the 4 spaces in the table:

H

I

J

Shape	No. of faces	No. of vertices	No. of edges
H	✗		✗
I			✗
J	✗	✗	

c) (i) Work out the **volume** of the **hole** in this plastic brick.

6 cm

4 cm

3 cm

5 cm

4 cm

Ans: (i)_____ cm^3

(ii) Find the **volume** of **plastic** in the brick.

Ans: (ii) _____ cm^3

(7 marks)