KULLEĠĠ SAN BENEDITTU

Boys Secondary School, Kirkop

B

HALF-YEARLY EXAMINATIONS – FEBRUARY 2013

FORM 3	MATHEMATICS Scheme B	TIME: 30 mins

Non Calculator Paper

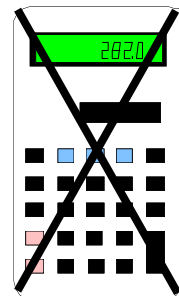| Question	1	2	3	4	5	6	7	8	9	10	Total
Max. Mark	3	2	5	4	2	2	2	1	2	2	25
Mark											

DO NOT WRITE ABOVE THIS LINE

NAME AND SURNAME: _____CLASS: _____

<u>INSTRUCTIONS TO CANDIDATES</u>:

Read all the questions carefully before you start answering.

- Answer all questions.

- This paper carries 25 marks.

- **Calculators, protractors**and other mathematical instrumentsare**NOT ALLOWED.**

- On your desk you should have nothing except for **pen, pencil, ruler**and the **examination paper**.

1. a) Hannah needs to be in Valletta for an interview at 10 am.
        She thinks that her journey will take 90 minutes.
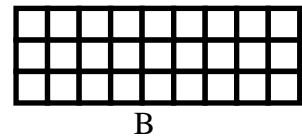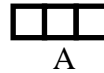   What time should she leave home?

        _____

    b) How many minutes are there between midnight and 02:10 on the same day?

        _____ minutes

        (3 marks)

2. Write down, in their **simplest form**, the **ratios** of

    (i) the **length** of A **:** the **length** of B

        _____ **:** _____

        Ans: ____ : ____

    (ii) the area of A **:** the area of B

        _____ **:** _____

        Ans: ____ : ____
        (2 marks)

3. Work out the following

    a) $\dfrac{1}{4} + \dfrac{2}{5}$

    b) $\dfrac{9}{8} \times \dfrac{4}{3} - \dfrac{1}{2}$

    Ans   a) _____   Ans   b) _____

        (5 marks)

4. a) Fill in the missing commands to draw a rectangle of length 100 turtle steps and width of 40 turtle steps.

REPEAT 2 [FD _____ _____ 90 FD _____ RT 90]

b) If **20 turtle steps represent 1 metre**, find the actual **length** of the above rectangle in real life.

_____m

(4 marks)

5. Work out the value of **2(x + y)** when $x = 4$ and $y = 6$.

_____

(2 marks)

6. Find the **gradient** of the line joining the two points A (3, 5) and B (5, 7).

_____

(2 marks)

7. a) Work out the number which lies **half way** between -10 and 4.

_____

b) Complete: $5 \times$ ____ $= (-15)$

(2 marks)

8. Make v the subject in the formula $w = v - 5$.

_____

(1 mark)

9. Work out: $\dfrac{1}{6} \times \dfrac{3}{4} \times \dfrac{2}{5}$

_____

(2 marks)

10. Expand $5(2x - 3)$

_____

(2 marks)

END OF PAPER

HALF-YEARLY EXAMINATIONS – FEBRUARY 2013

FORM 3 **MATHEMATICS** Scheme B **TIME: 1hr 30mins**

Main Paper

Question	1	2	3	4	5	6	7	8	9	10	11	12	Main	NC	Global Mark
Max. mark	3	7	4	4	7	5	6	7	5	8	10	9	75	25	100
Mark															

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NAME AND SURNAME: _____ CLASS: _____

INSTRUCTIONS TO CANDIDATES:

Read all the questions carefully before you start answering.

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

1. **Fill in:**

   a) 40km = _____ m

   b) 8 litres = _____ *ml*

   c) 5 weeks = _____ days

<div align="right">(3 marks)</div>

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2. These are the current temperatures recorded in the following cities :

Berlin	-3°C
Moscow	-10°C
Valletta	12°C
London	2°C
Paris	3°C

   a) Which is the **coldest** city and the **warmest** city?

   Coldest: _____   warmest: _____

   b) What is the difference in temperatures between **Moscow** and **Valletta?**

   Answer: _____

   c) During the day, the temperature in all the five cities **increases by 5°C**.
   Write down the new temperatures.

Berlin	_____
Moscow	_____
Valletta	_____
London	_____
Paris	_____

<div align="right">(7 marks)</div>

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3. In a school outing, the ratio of

the number of pupils **:** the number of teachers =

15 : 1

The **total** number of **students and teachers** is 128.

Work out :

a)   the number of **teachers.**

Answer: _____ teachers

b)   the number of **students.**

Answer: _____ students

(4 marks)

4. a) Factorise completely :

$$25y^2 - 30x$$

Answer: _____

b) Expand the brackets and simplify :

$$5(3x - 4) + 5(x - 6)$$

Answer: _____

(4 marks)

5. Given below are the television programmes for **Texas** TV and **Vegas** TV.

	Texas TV		Vegas TV
18:10	Kids corner	18:00	Junior stars
19:00	Teleshopping	18:35	Travel with me
19:45	NEWS	19:00	Comedy
20:20	Sports	19:25	I'm Alive
20:30	Weather Report	20:05	NEWS
20:35	Serial	20:30	Sports
21:05	Film: DUPLEX	20:45	Film: HITCH

a) Fill in :

   i.   On **Texas** TV, NEWS begins at _____.

   ii. On **Vegas** TV _____ begins at seven o'clock.

b) Which news is longer and by how much?

Answer: _____ by _____

c) The film on **Texas** TV takes 1 hour and 40 minutes. At what time does it end?
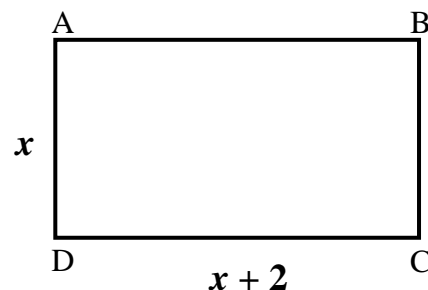
Answer: Time: _____

d) The film on **Vegas** TV ends at 23:00. How long is it?

Answer: _____hrs _____mins

(7 marks)

6. ABCD is a **rectangle** whose sides are x cm and $x + 2$ cm.

   a) Write down and **simplify** an expression for its **area.**

   Answer: Area = _____ cm^2

   b) Solve $5x - 7 = 3x + 13$

   Answer: $x =$ _____

   (5 marks)

7. a) Rearrange the formula to make p the **subject of the formula.**

   $$g = 4p + 5$$

   Answer: _____

   b) Owen wants to rent a car. He has to pay a fixed charge of €30 plus €10 per day.

      i. How much does it cost him to rent a car for **7 days?**

      Answer: €_____

      ii. Write a formula for the total cost €C when renting the car for n days.

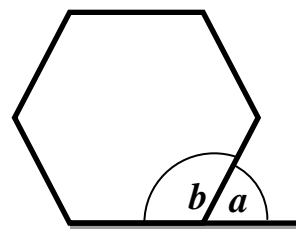   Answer: $C =$ _____

   (6 marks)

8. a) Fill in:

The sum of all the **exterior** angles of any polygon adds up to _____°

b) This is a regular hexagon.
Work out:

i. The size of the **exterior angle a.**

Answer: **a** = _____°

ii. The size of the **interior angle b.**

Answer: **b** = _____°

iii. The **sum** of the **interior** angles of the hexagon.

Answer: Sum of interior angles = _____°

(7 marks)

9. a) Write down and simplify an **expression** for the **perimeter** of this frame.

$(20x - 12y)cm$

$(10y - 3x)cm$

Answer: _____

b) **Simplify** $10a \times 2c \times a$

Answer: _____

(5 marks)

10. a) Draw a circle with centre O and **radius 6 cm.**

O

b) Inscribe an **octagon** inside the circle. Measure one side of the octagon.

Answer: Side = _____cm

c) Work out the perimeter P of the octagon.

Answer: P = _____ cm

(8 marks)

11. a) Complete the following table for the graph $y = 2x + 1.$

x	−2	−1	0	1	2	2.5
$2x$						
$+ 1$						
y						

b) Using a scale of **2cm to represent 1 unit** on both axes use the graph below to draw the line $y = 2x+1.$
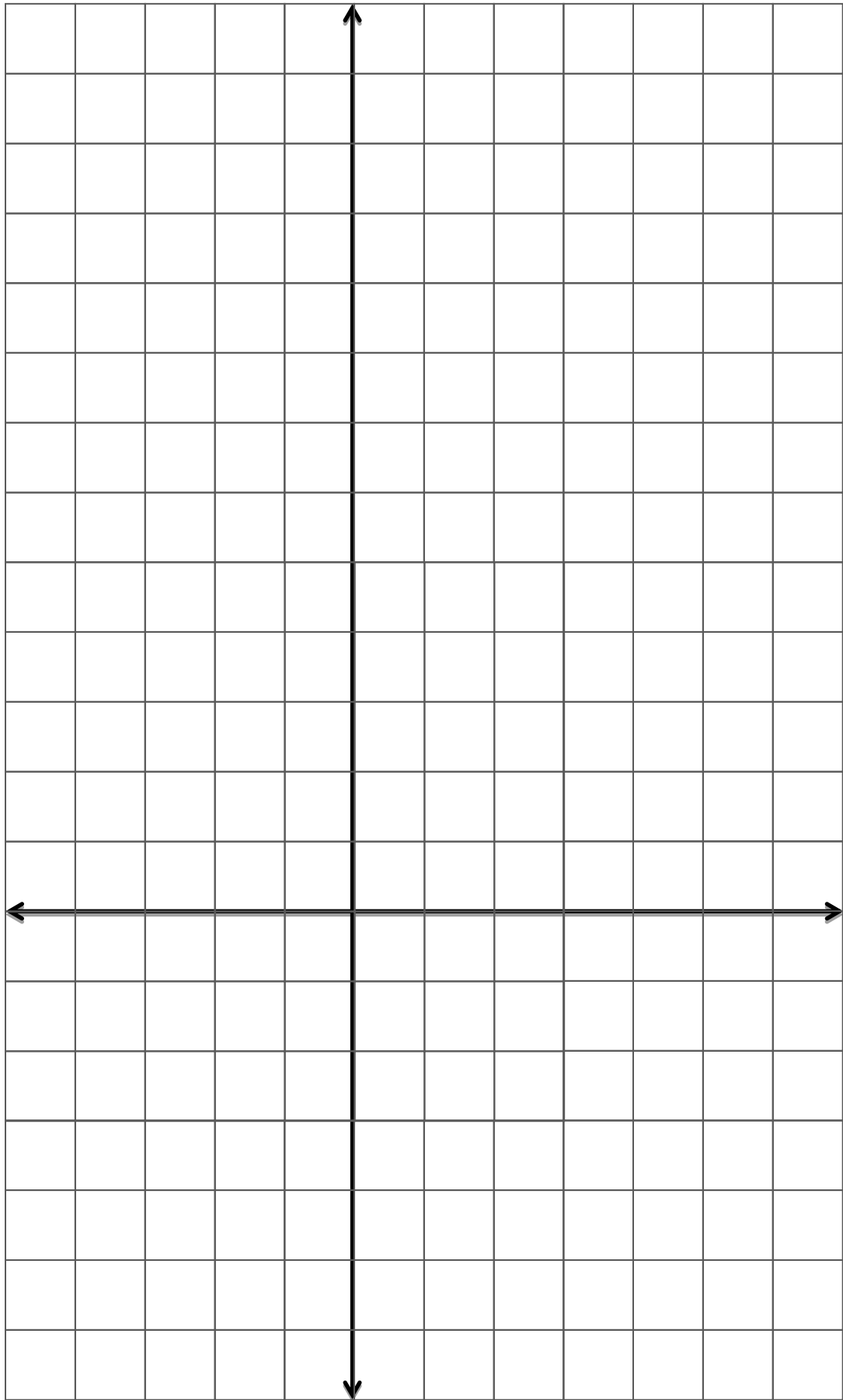
c) Find the gradient and y-intercept of the graph.

Answer: Gradient = _____ y-intercept = _____

d) From your graph, find the values of y when $x = -1.5.$

Answer: $y =$ _____

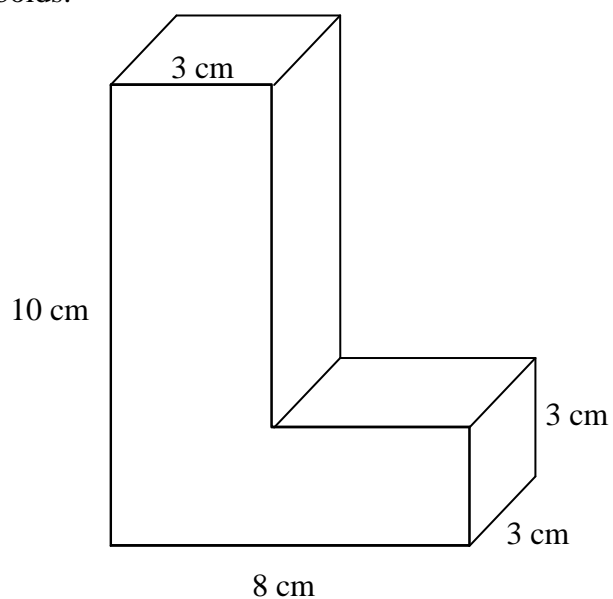e) Find the value of x when $y = 4.$

Answer: $x =$ _____

(10 marks)

12. The following L-shaped solid is made up of cuboids.

Work out :

a) the **Volume** of this shape.

3 cm

10 cm

3 cm

3 cm

8 cm

Answer: Volume = _____ cm^3

b) the **Surface Area** of the shape.

Answer: Surface Area = _____ cm^2

(9 marks)

END OF PAPER