STELLA MARIS COLLEGE, GZIRA **HALF-YEARLY EXAMINATIONS 2014**

FORM 1 **MATHEMATICS**

Time: 2 hrs

ATTEMPT ALL QUESTIONS:

- ✓ Write your answers in the space available on the examination paper.
- ✓ Show clearly all the necessary steps and explanations in your working.
- ✓ Diagrams are **NOT** drawn to scale.
- ✓ The use of calculators is **NOT** allowed.
- ✓ This paper carries a total of 100 marks.

Name: _____ Class: _____

1a) Work out the following:

i. $75 + (-7) - (+3)$

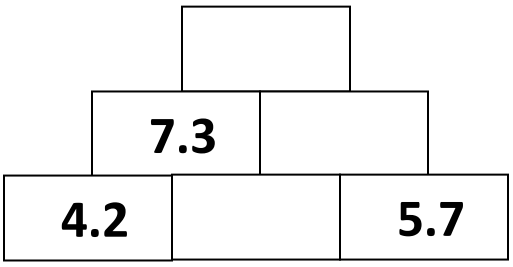
ii. $152.45 \times 10\,000$

iii. $(-8245) \div (-100)$

iv. $156 \div 0.3$

(4 marks)

b) As you go up the pyramid, each number is the **sum** of the two numbers below it. Complete the pyramid by filling in the missing numbers.



(3 marks)

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2. Work out the following:

a) Find the **product** of *one hundred and eighty-five* and *sixty-nine*. Then **subtract** fifty-seven.

b) Find the **difference** between two hundred and thirty thousand and twelve thousand and five hundred and fifty.

(4 marks)

3. Work out the following:

a) $72 \div 8 + 10 \times 2 - 3 \times 6$

b) $50 + (11 \times 4 \div 2) - 2$

c) $(12 + 8) \times (3 + 2) \div (40 - 30)$

d) $\dfrac{(36 \div 3 + 50)}{(6 \times 2 - 2)}$

(8 marks)

4a) Give the **place value** of the underlined figure:

i. 6.34 _____

ii. 163.32 _____

iii. 782.1928 _____

Place **>** or **<** or **=** between these pairs of numbers to make the statement correct.

i. 86.009 _____ 86.09

ii. 439.190 _____ 439.1900

iii. – 0.998 _____ – 0.989

(3 marks)

c) In the following magic square, each row, column and diagonal have the same magic total. Complete the magic square so that this magic total is ***– 6***.

-3	**2**	
	-2	**0**
1		**-1**

(3 marks)

5. Work out these problems.

a) There are 45 drawing pins in a box. How many **full** boxes can you fill up with 750 drawing pins?

(2 marks)

b) There are 132 postage stamps on a sheet of stamps. How many postage stamps are there on 48 sheets?

(2 marks)

c) Find the **total cost** of 2 tins of tuna at €1.16 per tin, 4 large onions at 23 euro cents each and 500g mushrooms at €2.20 per kilogram.

(3 marks)

6. a) Write these decimal numbers as fractions in their **simplest form**.

Decimal Number	Fraction
0.65	
0.125	
2.8	

b) Write these fractions into decimal numbers.

Fraction	Decimal Number
$2\frac{3}{100}$	
$\frac{6}{25}$	
$\frac{5}{8}$	

(3 marks)

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7. In each pair, find another fraction whose size is between the two given fractions:

a) $\frac{12}{40}$ $\frac{7}{10}$ b) $\frac{3}{5}$ $\frac{13}{30}$

(4 marks)

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8. Work out the following:

a) $\frac{11}{12} - \frac{3}{4}$

(2 marks)

b) $2\frac{5}{8} + 3\frac{7}{12}$

(3 marks)

c) $4\frac{5}{12} - 2\frac{5}{36}$

(3 marks)

9a) Work out the following:

i. $\frac{7}{11} \times \frac{8}{9} \times \frac{33}{28}$

ii. $8\frac{3}{4} \times 2\frac{2}{7}$

(4 marks)

iii. $6\frac{4}{9} \div 1\frac{1}{3}$

iv. $\left(\frac{4}{7} + \frac{1}{3}\right) \div 3\frac{4}{5}$

(6 marks)

b) A jug of juice contains 400 millilitres. Rachel pours $\frac{2}{5}$ of the juice into some glasses. How much juice does Rachel pour out?

(2 marks)

10. Change these measurements into the **units** given.

a) 36 cm into **km**

b) 5 km into **mm**

c) 90 m into **cm**

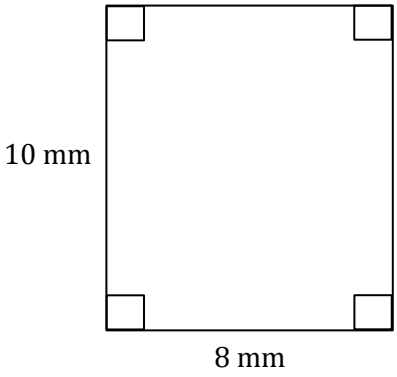
d) Match each of the following objects or distances to an appropriate measurement.

The width of a man's foot.	5 km
The distance between Malta and Gozo.	8 cm
The depth of a baby pool.	100 cm
The length of a metre ruler.	50 cm
The width of an injection needle.	1 mm

(4 marks)

11. Find the **perimeter** and **area** of the shapes below:

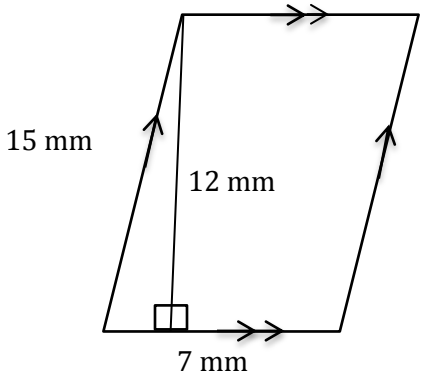
a)



Perimeter _____ **Area** _____

(2 marks)

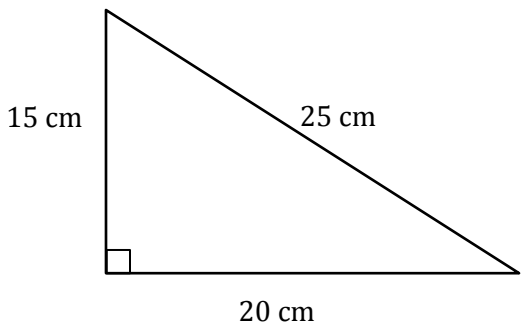
b)



Perimeter _____ **Area** _____

(2 marks)

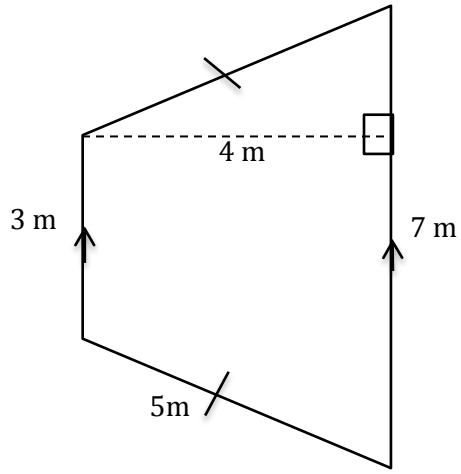
c)



Perimeter _____ **Area** _____

(2 marks)

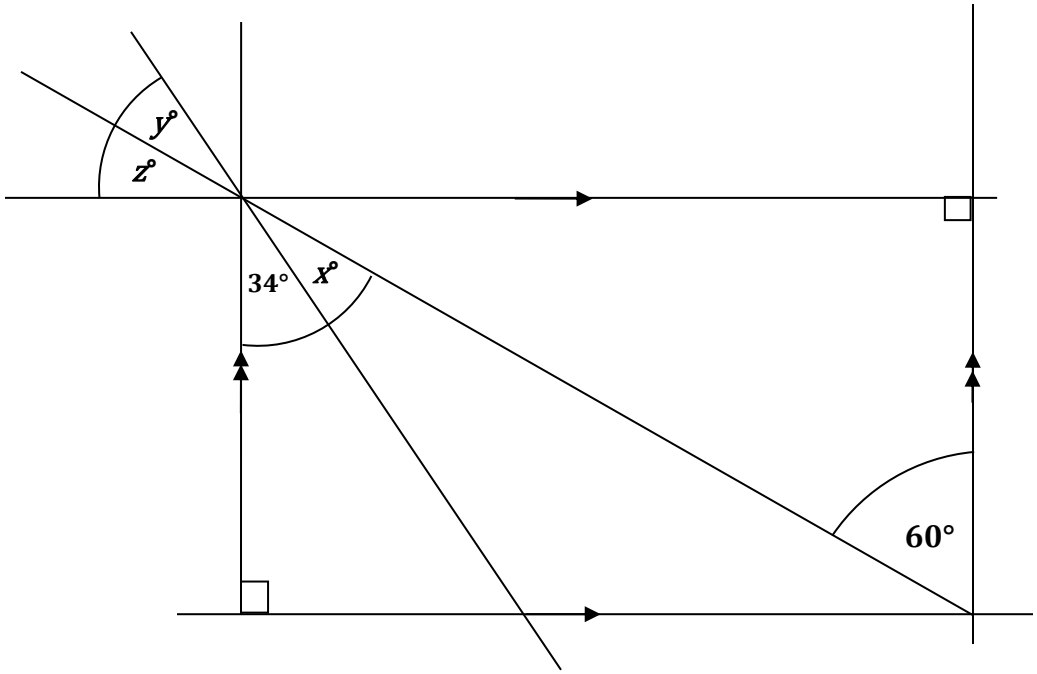
d)



Perimeter _____ **Area** _____

(4 marks)

12. The diagram shows two pairs of parallel straight lines intersecting at right angles. Find the sizes of angles x, y and $z°$ giving reasons for your answers.



Angle x = _____

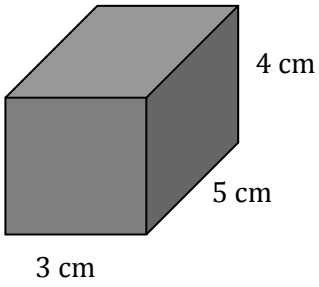
Angle y = _____

Angle z = _____

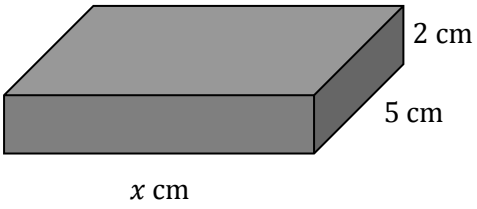
(6 marks)

_____

13. The drawing below shows two cuboids, **Cuboid A** and **Cuboid B**, having the **same volume.**



Cuboid A



Cuboid B

a) Find the **volume** of **Cuboid A**.

(1 mark)

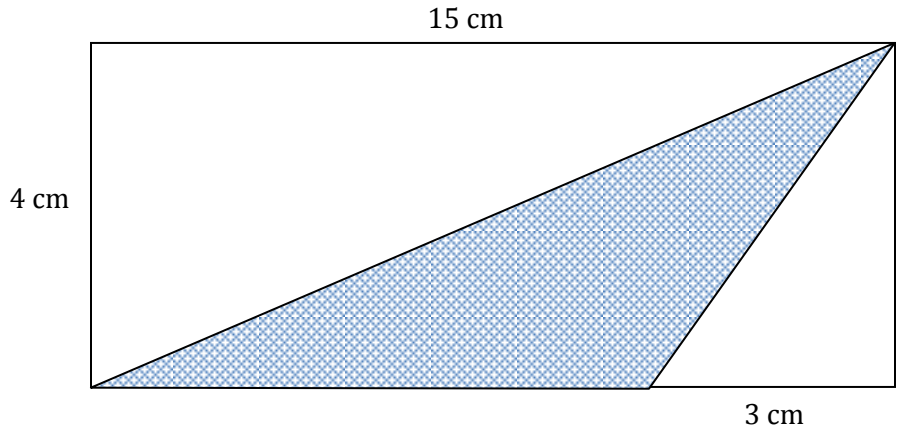
b) Find the **length** of **Cuboid B**.

(2 marks)

c) Calculate the **total surface area** of **Cuboid A**

(3 marks)

14a) Find the **area of the shaded triangle** inside the rectangle.



Shaded Area _____

(3 marks)

b) Express the area of the shaded triangle as a fraction of the total Area. Simplify this fraction to the lowest terms.

(1 mark)

15. The figure below is a sketch of a wooden pillar used during a theatrical production. The pillar is made up of two identical symmetrical trapeziums and a rectangle between them.

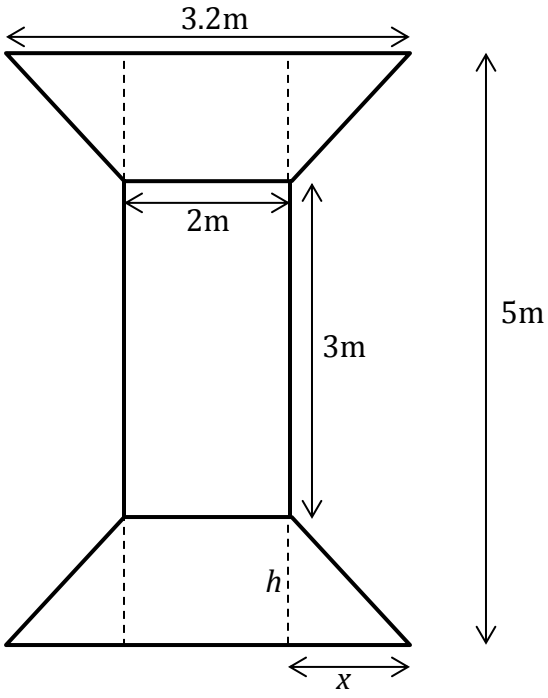


Diagram NOT to Scale

a) Find the height ***h*** of the trapezium and the length ***x***. *(2 marks)*

b) Calculate the Area of ONE trapezium. *(3 marks)*

c) Hence find the Area of the whole structure. *(2 marks)*

16a) Using a protractor for all angles and using a scale of 1 cm to represent 10 units, **draw the diagram** which Kristina has completed in the space below. The initial position of the turtle is shown by the black dot.

pd

fd 40

lt 90

fd 20

rt 120

fd 50

rt 120

fd 50

rt 120

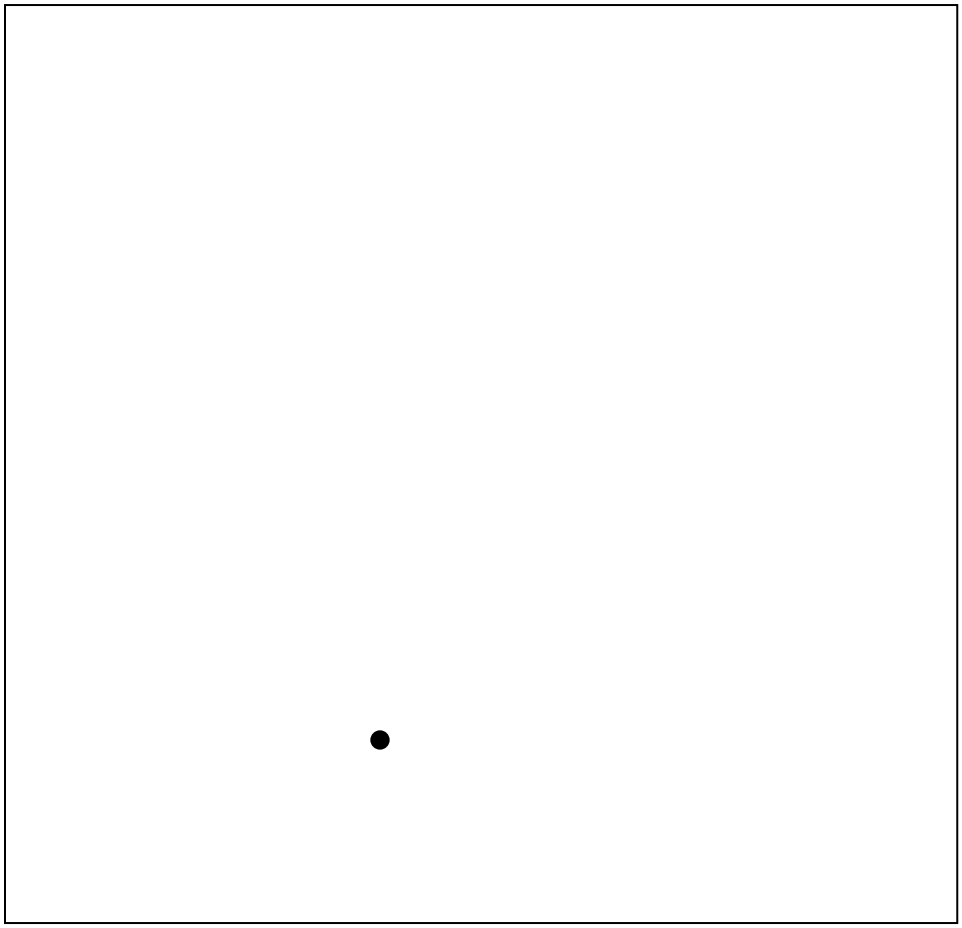
fd 20

lt 90

fd 40

rt 90

fd 10



(4 marks)

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