



STELLA MARIS COLLEGE, GZIRA

ANNUAL EXAMINATIONS 2015

FORM 1

MATHEMATICS

TIME: 2 hrs

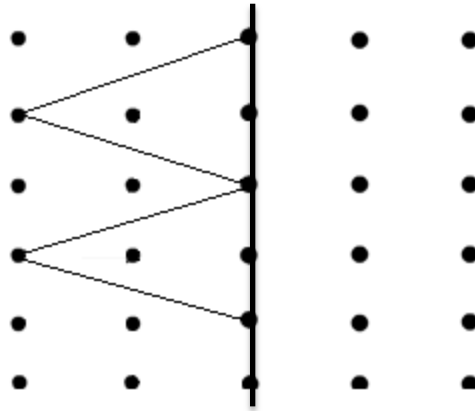
Name: _____

Class: _____

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.

1. Consider the shape below.
 - a) Complete the shape below along the mirror line
 - b) State the **order of rotation** for the shape.



Order of rotation _____.

(3 marks)

2. Work out the following:
 - a) $(7 + 30) \times 2 - 45$
 - b) $7 - 9 \div 3 + 6 \times 2 - 4 \div 2$
 - c) $(0.002735 \times 1000) + \frac{123.4}{100}$



(3 marks)

3. Solve the equation riddles below.

$$45 \times 32 = 1440$$

a) $45 \times \underline{\quad} = 720$

b) $\underline{\quad} \times 0.32 = 14.4$

c) $90 \times 64 = \underline{\quad}$

(3 marks)

4. Complete these sums.

a) Put the following numbers into **ascending order**.

5.675, 5.5, 6.576, 6.675, 6.5, 6.756

(3 marks)

b) Arrange the fractions in descending order of size

$\frac{5}{6}$, $\frac{1}{2}$, $\frac{7}{9}$, $\frac{11}{18}$, $\frac{2}{3}$, $\frac{11}{12}$

(3 marks)

c) Work out 9.37×8.04

(2 marks)

5. Work out the following:

i. $1\frac{3}{4} + 3\frac{7}{44}$

ii. $9\frac{37}{100} - 4\frac{6}{50} + \frac{9}{25}$

iii. $\left(\frac{3}{10} \div \frac{3}{20}\right) \div 2$



(6 marks)

6. Write the following numbers:

a) 'Three million five hundred and fifty thousand, seven hundred and twenty-five' in **figures**.

b) **54,678** in words.

(2 marks)

7.

a) Complete this list of the **factors** of **36**

1, _____, _____, _____, _____, _____, _____, _____, 36

b) Which of these factors are **prime numbers**?

c) Write **36** as a **product of primes**.

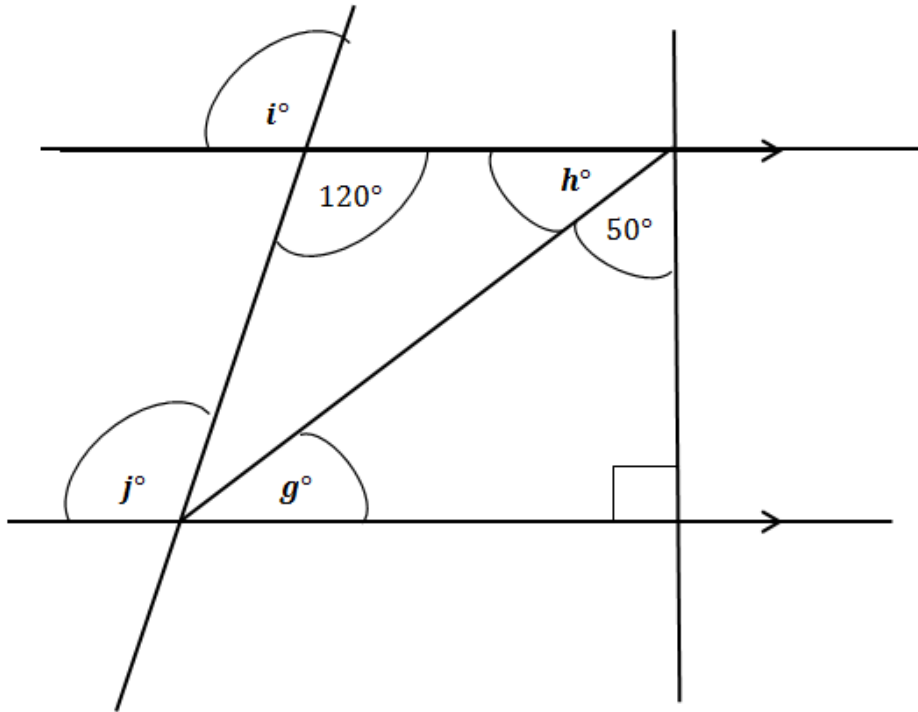
d) Find the **LCM** and **HCF** of **36** and **48**.

LCM _____

HCF _____

(10 marks)

8. Find the size of the missing angles g° , h° , i° and j° , giving reasons for your answers.



Angle $g^\circ =$ _____ $^\circ$ Reason: _____

Angle $h^\circ =$ _____ $^\circ$ Reason: _____

Angle $i^\circ =$ _____ $^\circ$ Reason: _____

Angle $j^\circ =$ _____ $^\circ$ Reason: _____

(8 marks)

8. Mark is in charge of the under 10 scouts club at Rabat.
a) The ages of the children in the scouts club are

8, 10, 11, 8, 12, 9, 10, 11, 10, 12

i. Find the **mean** age of the class.

ii. Find the **range** for the class.

(2 marks)

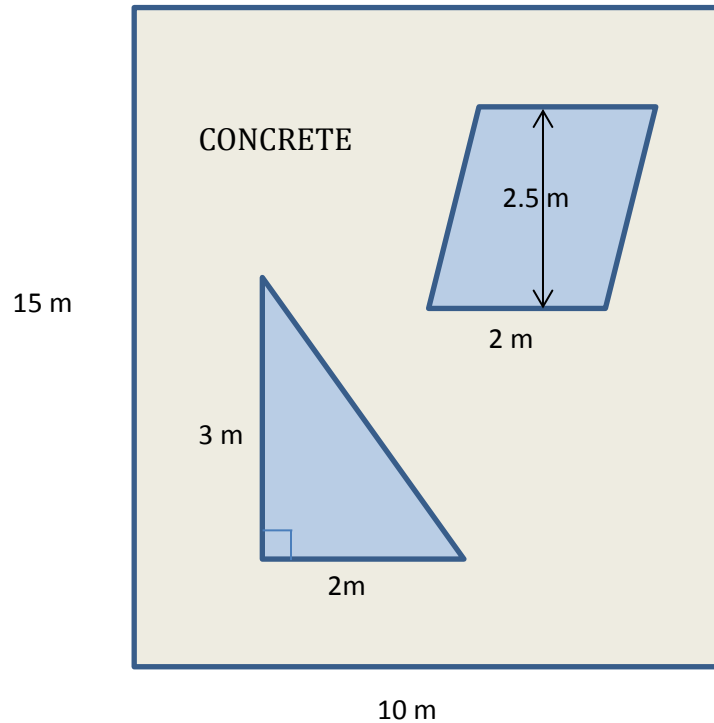
- b) 9 of the students in Mark's scout team took a first-aid test and the average mark was 15. Carlos, a boy from the team, was away on the day of the test so he took the test later. His mark was 24.

i. What is the **total** of the marks for all the students who took the test at the proper time?

ii. Find the **new mean mark** when Carlos's mark is added to the total.

(2 marks)

9. The diagram shows two ornamental ponds surrounded by concrete.



a) Calculate the area of the ponds.

(4 marks)

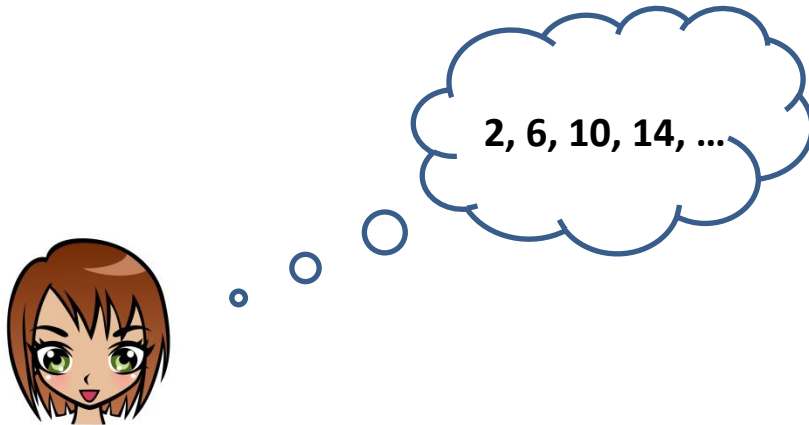
b) Calculate the area of concrete.

(1 mark)

c) Concrete costs €2.70 per square metre. Calculate the cost of the concrete surrounding the ponds.

(1 mark)

10. Kerry thinks of the following sequence:



a) What are the next four terms of Kerry's sequence.

2, 6, 10, 14, _____, _____, _____, _____.

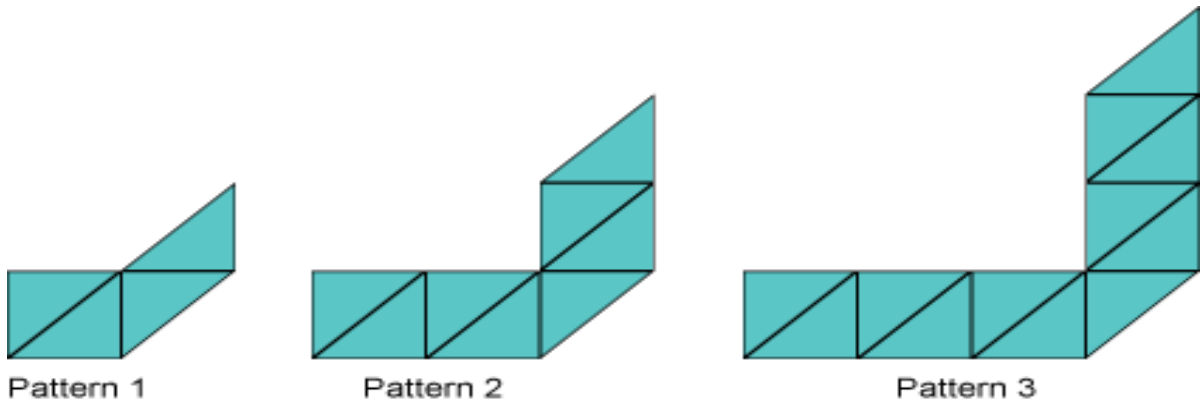
(2 marks)

b) What is the 20th term of the sequence?

c) Find a formula for the nth term of the sequence?

(2 marks)

d) Kerry then generates a sequence using triangular tiles as shown in the set of figures below.



i. Complete the table with Kerry.

POSITION	1	2	3	4
TILES				

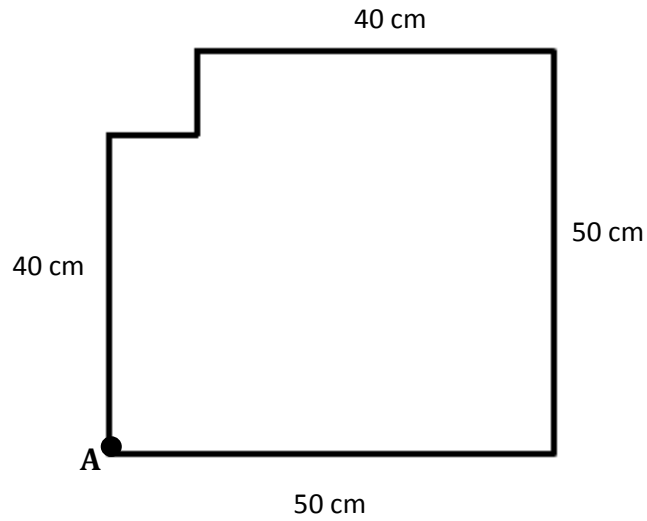
ii. What is the **term-to-term rule** of the sequence?

iii. What is the **position-to-term rule** of the sequence?

iv. What is the 100th term of the sequence?

(4 marks)

11. Consider the shape shown below. One of the corners of the square is cut off.



List the **LOGO commands** to create this shape taking point **A** as a starting point. Take 10 cm to represent 1 turtle step.

PD

RT 90

FD 4

FD 4

RT 90

FD _____

FD 5

____90

RT 90

FD _____

FD 5



(3 marks)

12. a) Zoe has measured the heights of the students in her class. She measured to the nearest centimetre. Here are her results.

130, 120, 146, 118, 120, 137, 165, 111,

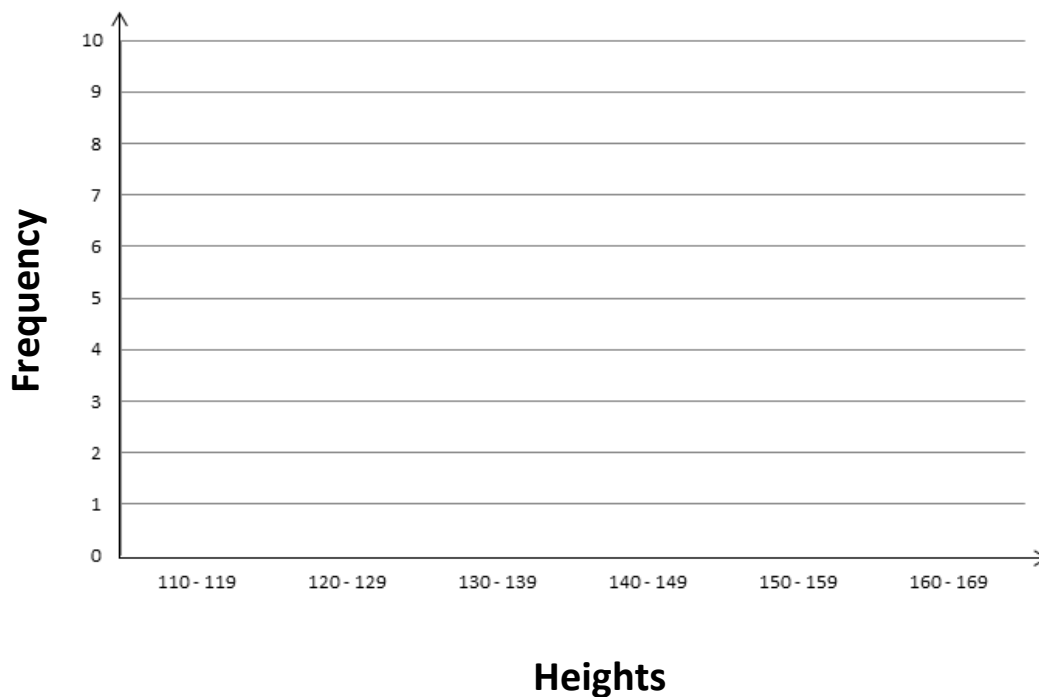
145, 168, 118, 145, 113, 158, 120, 169.

i. Complete the **tally chart** and **frequency table** shown below.

<i>HEIGHT GROUPS</i>	<i>TALLY CHART</i>	<i>FREQUENCY</i>
110 - 119		
120 - 129		
130 - 139		
140 - 149		
150 - 159		
160 - 169		
	<i>TOTAL</i>	

(1 mark)

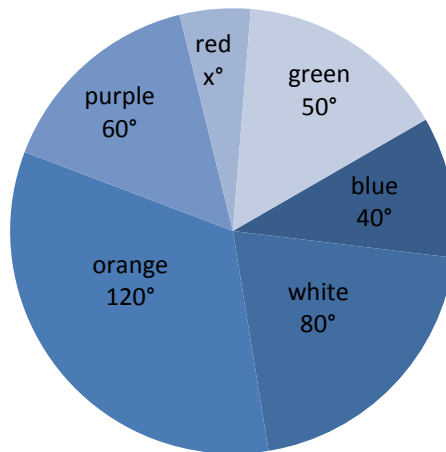
ii. Draw a **grouped frequency diagram** to illustrate this data.



(3 marks)

- b) A survey was carried out at San Anton Gardens and people were asked to vote for their favourite colour. It resulted that the most favourite colour is orange and the least favourite colour is red.

Favourite Colour



If 720 people participated in the survey,

- i. Work out angle size for the red colour.

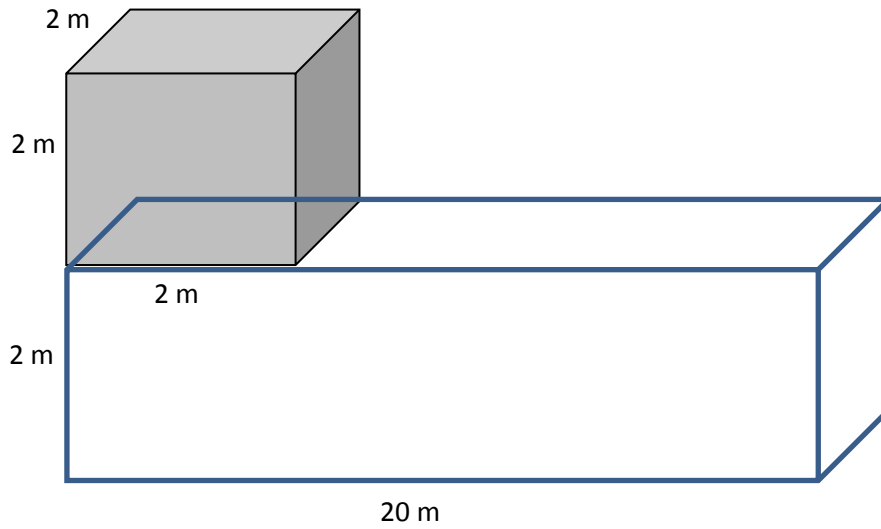
(1 mark)

- ii. How many people like red?

- iii. How many people like orange?

(4 marks)

13. The L-shaped prism below is made by joining two cuboids together.



Calculate,

- i. The volume of the grey cube.

- ii. The volume of the white cube.

- iii. The total volume of the L-shaped prism.

(3 marks)

14. Work out these problems.



a) Gemma wants to find the weight of some identical parcels. She uses a pair of weighing scales.

i. Write down an equation that is represented by the scales above.

(1 mark)

ii. Solve your equation to find the weight of one parcel.

(3 marks)

iii. Substitute to check your value of x and check your answer.

(1mark)

15. Simplify the following expressions.

i. $9a + 2c - 6b - 8a - b$

ii. $6(2f + 3) + 9(f - 2)$

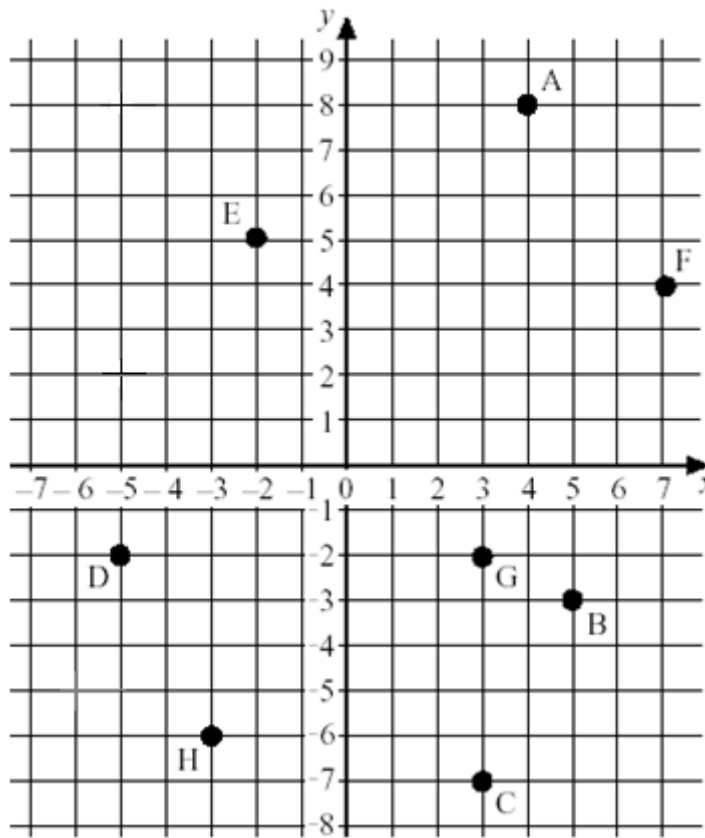
(4 marks)

16. Solve the following equations.

<p>i. $p + 5 = 9$</p> <p>(1 mark)</p>	<p>ii. $t - 3 = 11$</p> <p>(1 mark)</p>
<p>iii. $10 + b = 12$</p> <p>(1 mark)</p>	<p>iv. $2y = 60$</p> <p>(1 mark)</p>
<p>v. $\frac{k}{3} = 8$</p> <p>(1 mark)</p>	<p>vi. $4n + 7 = 15$</p> <p>(2 marks)</p>
<p>vii. $3(2h + 2) = 2h + 13$</p> <p>(2 marks)</p>	

17. a) Fill in the values **A** to **K** of the coordinates shown in the grid below.

A	B	C	D	E	F	G	H



(4marks)

b) Plot the following two points

I	J
$(-2, 1)$	$(6, -7)$

(2 marks)

END OF PAPER