



STELLA MARIS COLLEGE, GŻIRA

ANNUAL EXAMINATIONS 2014

FORM 2

MATHEMATICS NON-CALCULATOR PAPER

Time: 1 hour

Instructions

This paper carries a total of 50 marks

Answer ALL questions

Show all your working

The use of non- programmable calculator is allowed

When not stated give your answers to 2 decimal places

Name: _____

Class: _____

1. a) Is each expression true or false? Show working for your answer.

i. $5^2 > 2^5$

ii. $\left(\frac{3}{5}\right)^2 = \frac{9}{25}$

iii. $-4^3 = (-4)^3$

iv. $1^p = p$

(2 marks)

b) Simplify these expressions. Give your answer in **index form**.

i. $100p^6 \div 10p^{-4}$

ii. $3b^6 \times 2b^{-7}$

iii. $(3p^7)^3$

(3 marks)

2. Complete the following table:

Equation	Gradient	Y-Intercept
$y = 5x + 1$		
	- 2	5
$y = 7 - 3x$		
	0	- 4
$2y = 5x + 4$		

(5 marks)

3. a) Calculate the following:

i. 12.3×4.6

ii. $35.23 \div 1.3$

(4 marks)

iii. $10\frac{5}{6} + 7\frac{3}{8}$

iv. $8\frac{2}{3} \times \frac{7}{13} \times 1\frac{4}{5}$

(4 marks)

4. In a football crowd, 23% of the people had red flags and $\frac{2}{5}$ of the people didn't have any flags.

a) What percentage didn't have any flags?

(1 mark)

b) What percentage had flags which were not red?

(1 mark)

c) What is your answer to **part b)** as a decimal?

(1 mark)

d) What fraction (in its lowest terms) had red flags?

(1 mark)

5. In the puzzle below, the sum of the first column is equal to the sum of the second column. What is the value of x ?

$4 - 3x$	$3x + 12$
$5 + 3x$	$5 + 3x$
$10x + 6$	$7 - 8x$

(3 marks)

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6. Mr. Caruana's weight was 115kg when he decided to go on a diet. He lost 10% of his weight in the first month and a further 8% of the original weight on the second month. How much did he weigh after two months?

(2 marks)

7. Two fair dice are rolled at the same time and the scores are ADDED together.

		Dice 1					
		+	1	2	3	4	5
Dice 2	1	2		4		6	
	2						
	3					7	9
	4		6				
	5						11
	6	7					11

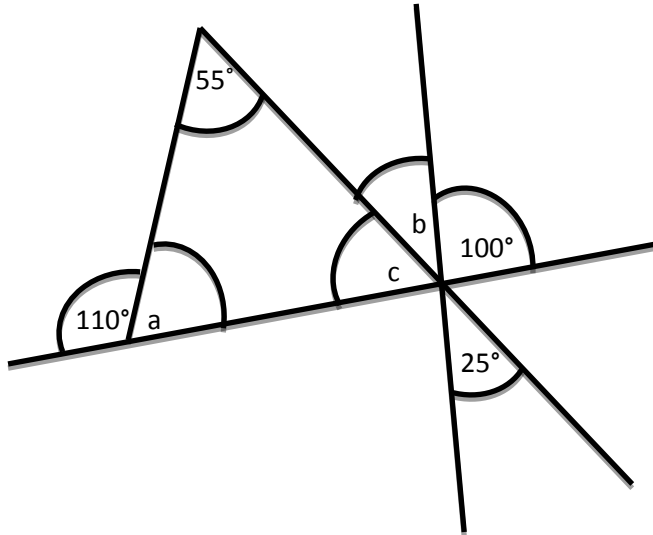
(2 marks)

- What is the probability of obtaining a score greater than 9?
- What is the probability of obtaining a score that is a prime?
- What is the probability of obtaining a score, which is a multiple of 5?
- What is the probability of scoring a 13?

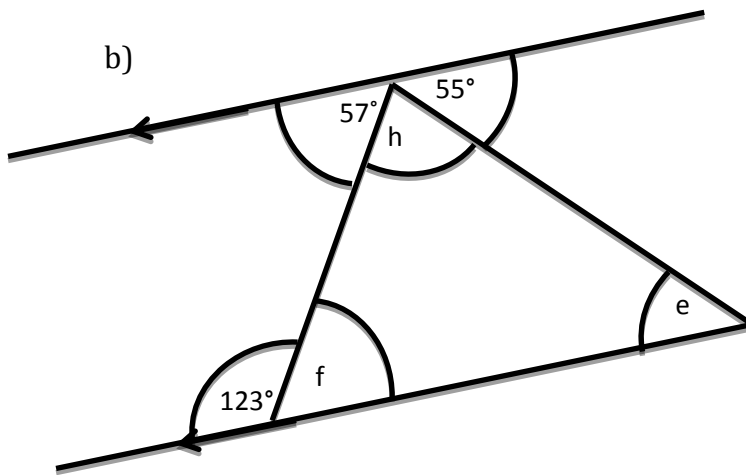
(2 marks)

8. Find the missing angles, giving reasons for your answers.

a)



b)



(3 marks each)

9. Simplify the following expressions:

a) $6x + 9y - 8x + y$

b) $9y + 4x - 11x^2 + 16x$

c) $\frac{545x^3}{5x}$

d) $11xy^2z \times 12xz^3$

(1 mark each)

e) Expand and simplify these expressions. Hence, select the odd one out.

a. $3(2x + 4) + 2(4 - 2x)$

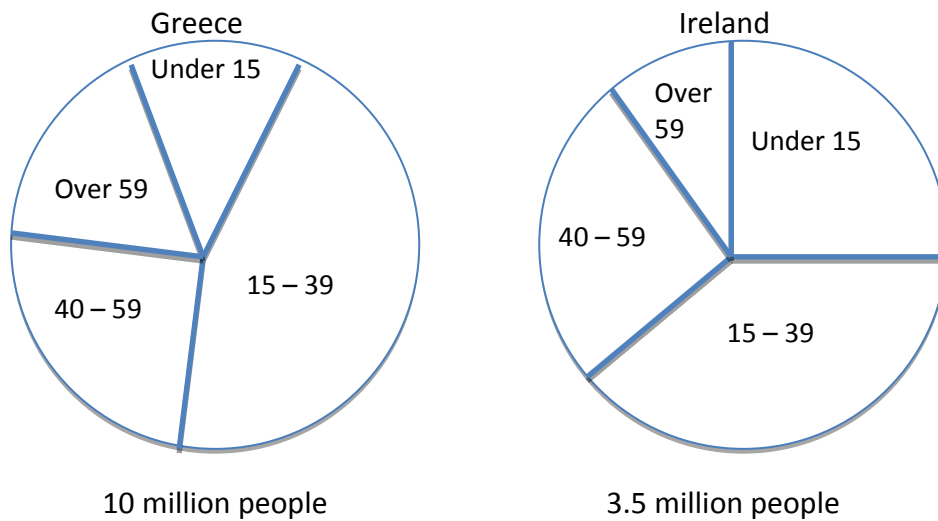
b. $(3x + 30) - (x - 10)$

c. $8(x + 4) - 3(2x + 4)$

d. $20 + x(8x + 4) - 2(4x^2 + x)$

(2 marks)

10. These pie charts show some information about the ages of people in Greece and in Ireland. There are about 10 million people in Greece and there are about 3.5 million people in Ireland.



- a. Give a rough estimate of the percentage of people in Greece are aged 40 – 59?

(1 mark)

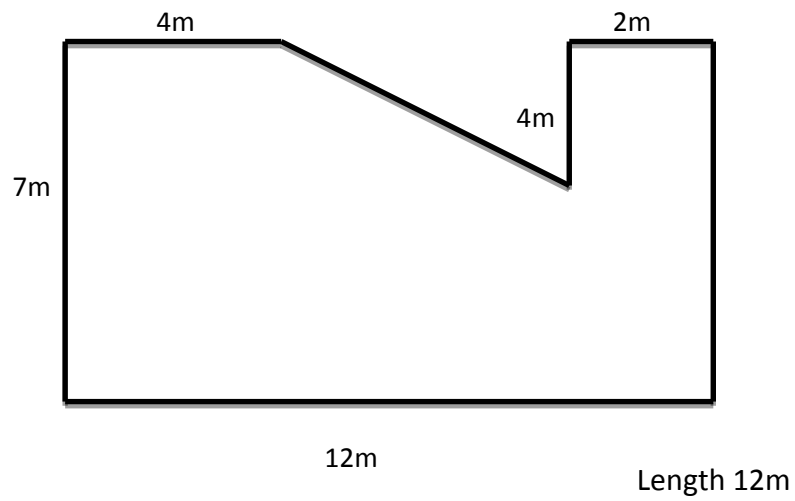
- b. There are about 10 million people in Greece. Use your percentage from part a) to give a rough estimate of the number of people in Greece aged 40 – 59?

(1 mark)

- c. Drew says: 'The charts show that there are more people under 15 in Ireland than in Greece'. Explain why this is not true.

(1 mark)

11. The following is the cross-section of a prism whose length is 12m. Find the volume of this prism. Give your answer to 3 significant figure.



(4 marks)

☺ End of Paper ☺