



ST NICHOLAS COLLEGE  
RABAT MIDDLE SCHOOL  
**HALF YEARLY EXAMINATIONS**  
February 2017

<b>Level</b> <b>6-7</b>
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Year 7 Mathematics Time: 1hr 30 min

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Name: \_\_\_\_\_

Class: \_\_\_\_\_

**Main Paper**

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	Main	NC	Global Mark
Mark																

**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. Write:

(a) **10 million** as a **power of ten** \_\_\_\_\_

(b)  $10^4$  in **figures** \_\_\_\_\_

(2 marks)

2. (a) Underline all the **prime** numbers below.

3, 15, 17, 23, 49

(b) Why are the numbers you underlined **prime**?

Because \_\_\_\_\_

(c)

48	8	24	9	6	2	5
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From this set of numbers write down:

(i) a **common multiple** of 6 and 8 \_\_\_\_\_

(ii) a **square** number \_\_\_\_\_

(4 marks)

3. This is a magic square.

All numbers and fractions (vertically, horizontally, and diagonally) add up to 9.

Work out the **value of the number** in the shaded square.

	1	$3\frac{1}{2}$
	3	

(5 marks)

4. Fill in the following number sequences:

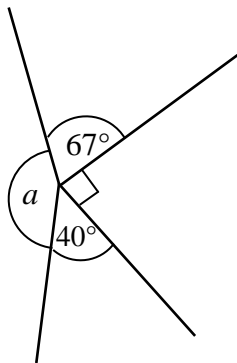
(a) 50, \_\_\_\_\_, 46, \_\_\_\_\_, 42.

(b) 1, 4, \_\_\_\_\_, 16, \_\_\_\_\_, 36.

(3 marks)

5. Work out the missing angles, giving **reasons** for your answers.

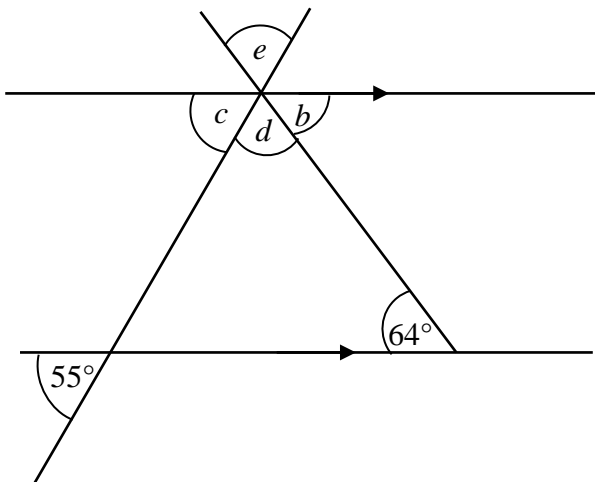
Note: The diagrams are not drawn to scale.



$a =$  \_\_\_\_\_<sup>o</sup>

Reason: \_\_\_\_\_

\_\_\_\_\_



$b =$  \_\_\_\_\_<sup>o</sup>

Reason: \_\_\_\_\_

\_\_\_\_\_

$c =$  \_\_\_\_\_<sup>o</sup>

Reason: \_\_\_\_\_

$d =$  \_\_\_\_\_<sup>o</sup>

Reason: \_\_\_\_\_

$e =$  \_\_\_\_\_<sup>o</sup>

Reason: \_\_\_\_\_

(10 marks)

6. (a) Write a **statement** for each of the following probabilities.  
The first one is done for you.

Probability	Statement
0	The probability of a human being living for 300 years
$\frac{1}{2}$	
1	

- (b) Johnny says that the probability of getting a 6 is the **same** as that of getting a 4 when throwing a fair die.

(i) Is he correct? Why? \_\_\_\_\_

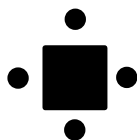
\_\_\_\_\_

(ii) What is the probability of getting an **even** number? \_\_\_\_\_

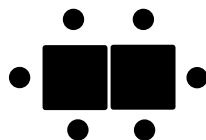


(5 marks)

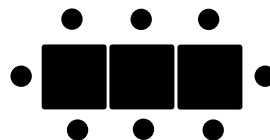
7. The diagram below shows a pattern made of one or more squares and a number of circles.



Pattern 1



Pattern 2



Pattern 3

- (a) **Draw** pattern 4 in the space provided.

- (b) **Fill in** the table:

<b>Pattern Number</b>	1	2	3	4	5	...	10
<b>Number of Circles</b>						...	

- (c) **Explain, in words, the rule** for the number of circles.

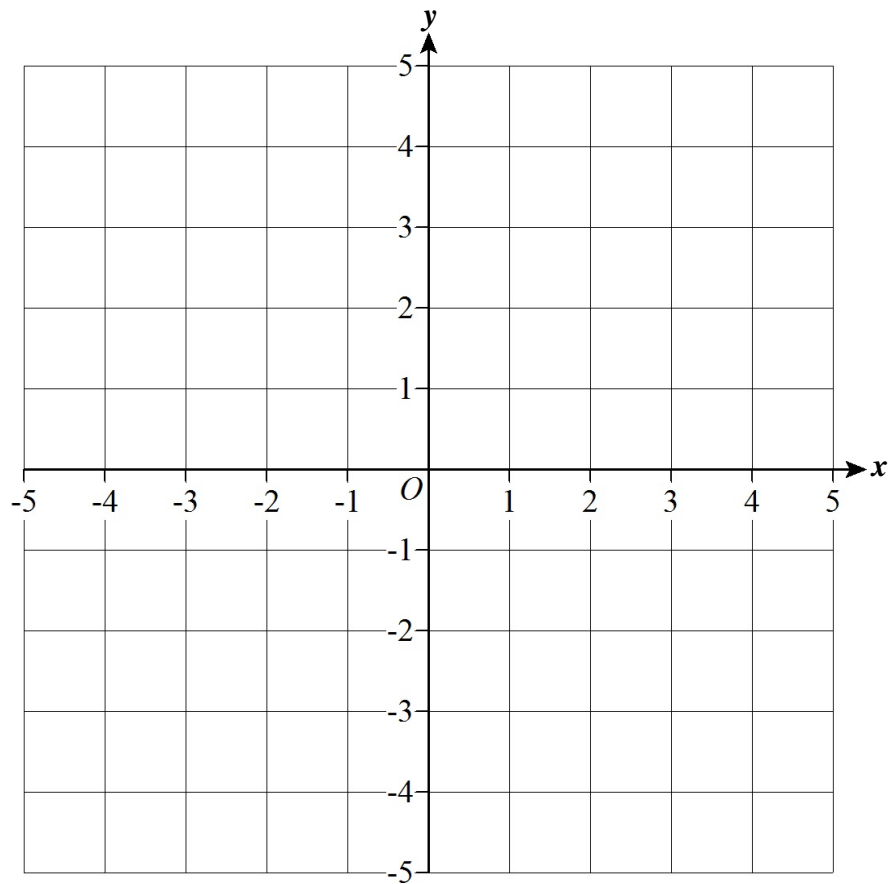
\_\_\_\_\_

- (d) Which pattern will have 42 circles?

Ans: Pattern \_\_\_\_\_

(7 marks)

8.



(a) On the squared grid above, plot and join the following coordinates to form a square.

$(-4, 3)$ ,  $(4, 3)$ ,  $(4, -5)$  and  $(-4, -5)$

(b) (i) What are the **coordinates** of the **centre** of the square? ( \_\_\_\_\_ , \_\_\_\_\_ )

(ii) **Explain** how you found the centre of the square.

\_\_\_\_\_

\_\_\_\_\_

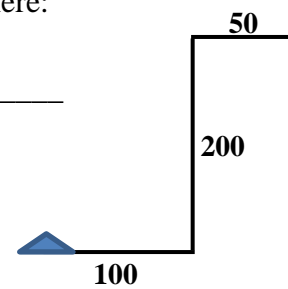
(6 marks)

9. (a) **Fill in** the turtle LOGO commands to draw the shape shown here:

PD RT 90 FD \_\_\_\_\_ LT \_\_\_\_\_ FD 200 RT \_\_\_\_\_ FD \_\_\_\_\_

(b) What **shape** would the turtle draw with these commands?

PD REPEAT 2 [FD 50 RT 90 FD 100 RT 90]



\_\_\_\_\_

(6 marks)

**10.** This week, Pete, Mary and Jake are given €6, €12, and €9 respectively as pocket money.

(a) Write the pocket money each receives in the form of a **ratio**.

Pete : Mary : Jake

\_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

(b) **Simplify** your answer in (a).

Pete : Mary : Jake

\_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

(c) Next week, Pete, Mary, and Jake will receive their pocket money in the **same ratio as before**. If Pete gets €18, work out the pocket money that **Mary** and **Jake** will receive.

Mary's pocket money = € \_\_\_\_\_; Jake's pocket money = € \_\_\_\_\_

**(5 marks)**

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**11.** John sat for five half-yearly primary exams. He got 90 in Maths and this was his **highest** mark. He got 85 in **both** English and Maltese. He got 65 in Religion and this was his **lowest** mark.

(a) Work out the **range** of his marks.

\_\_\_\_\_

(b) If the total number of marks he obtained amounted to 400, work out the mark he obtained in **Social Studies**.

\_\_\_\_\_

(c) What is the **modal** mark?

\_\_\_\_\_

(d) Work out the **mean** mark.

\_\_\_\_\_

**(7 marks)**

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12. (a) Fill in the table below.

Fraction	Decimal	Percentage
	0.5	
$\frac{1}{4}$		
		75%

(b) Work out:

$$\frac{2}{9} \times \frac{3}{4} \times \frac{1}{2}$$

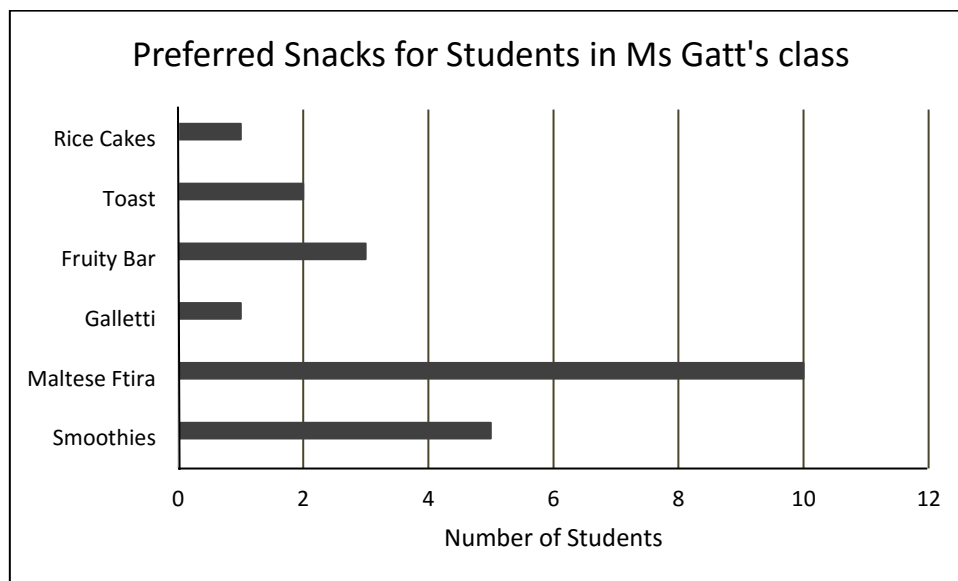
(c) Which is the **best offer** for a carpet costing €120 and by how much?



Best offer is \_\_\_\_\_ by € \_\_\_\_\_

**(8 marks)**

13. Students in Ms Gatt's class were asked to choose one snack they liked most from a list. The bar graph summarises the data collected from this survey.



- (a) How many **students** took part in the survey? \_\_\_\_\_
- (b) Which was the **most popular** snack? \_\_\_\_\_
- (c) Which snack was preferred by **only two students**? \_\_\_\_\_
- (d) **50% of the students** preferred Galletti or Maltese Ftira.  
Give a reason to explain this statement.  
\_\_\_\_\_
- (e) What **fraction** of the students preferred Galletti and Rice Cakes? \_\_\_\_\_

(7 marks)

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**END OF MAIN PAPER**