



ST NICHOLAS COLLEGE
RABAT MIDDLE SCHOOL
HALF YEARLY EXAMINATIONS
February 2016

YEAR 8

MATHEMATICS
Levels 7 – 8

Time: 1 hr 30 mins

Main Paper

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	Main	NC	Global Mark
Max Mark	2	2	5	10	3	4	3	3	4	14	10	8	7	75	25	100
Mark																

DO NOT WRITE ABOVE THIS LINE

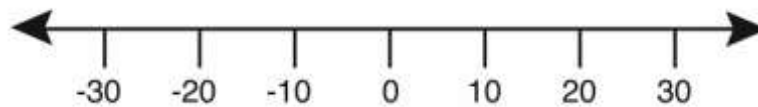
NAME AND SURNAME: _____ **CLASS:** _____

INSTRUCTIONS TO CANDIDATES:

Read all the questions carefully before you start answering.

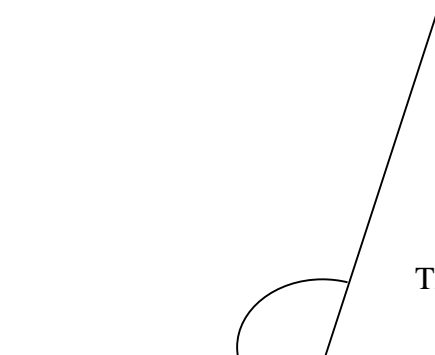
- Answer all questions.
- This paper carries 75 marks.
- Calculators and mathematical instruments are allowed but all necessary working must be shown.

1. Draw the inequality $x \geq -10$ on the number line below:



(2 marks)

2. **Measure** this angle and fill in:



This angle is _____ and is called (acute, reflex, obtuse).

(2 marks)

3. a) **Factorise completely:** $18f + 63m - 117d$

Ans: _____

b) Nessa put a container with 2250 cm^3 of water in a freezer. The day after, she took the container out and measured the volume of ice. She recorded the volume as 2340 cm^3 .
Find the **percentage increase** in the volume.

Ans: _____ %
(5 marks)

4. a) (i) Write down **all** the factors of 24 and 78.

Factors of 24: _____, _____, _____, _____, _____, _____, _____, _____

Factors of 78: _____, _____, _____, _____, _____, _____, _____, _____

(ii) Which of the above factors are **prime** numbers?

Prime Numbers: _____, _____, _____

(iii) What is the H.C.F of 24 and 78?

Ans: H.C.F: _____

b) Ian is playing with his toy cars. The time taken for the cars to complete the track is:

15 seconds for the green car,
20 seconds for the yellow car and
24 seconds for the orange car.

If they all start at the same time, after how many **minutes** will they be side by side again?



Ans: _____ minutes
(10 marks)

5. Use a calculator to evaluate:

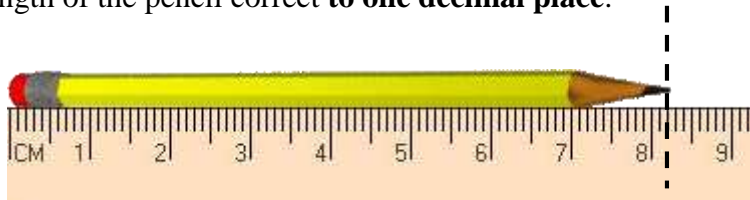
a) $\frac{1}{4} + \frac{3}{5} - \frac{1}{8} =$ _____

b) $\sqrt{29 + 1.25} =$ _____

c) Half of $2^6 =$ _____

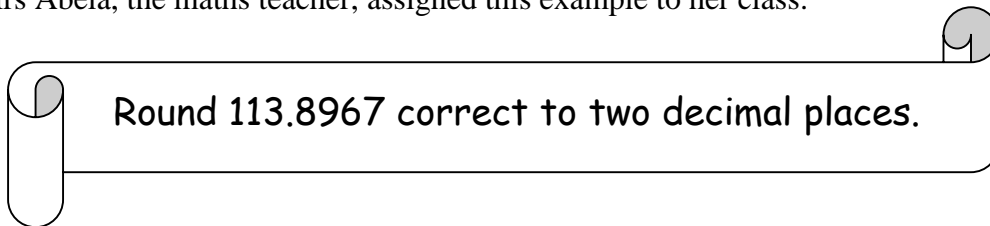
(3 marks)

6. a) Write the length of the pencil correct **to one decimal place**:



The pencil is _____ cm long.

b) Mrs Abela, the maths teacher, assigned this example to her class:



Francesca, one of the students, gave the answer as **113.81**.

Pierre, another student, wrote his answer as **113.90**.

Ella, another student, wrote her answer as **113.89**.

i) **Who** got the **correct** answer? _____ .

ii) **Why** are the other two **answers wrong**?

Wrong Answer 1 because _____
_____ .

Wrong Answer 2 because _____
_____ .

(4 marks)

7. a) Write $>$, $<$ or $=$ in the given spaces.

i) -4×2 $-4 + (-4)$

ii) $-3 - (-7)$ $16 \div (-4)$

b) What is **half way** between -6 and 2 ?

Answer: _____

(3 marks)

8. Work out, giving your answer **in its lowest terms**. **Show all your working**.

$$\frac{135}{156} \times \frac{28}{90} \div \frac{42}{65}$$

Ans: _____

(3 marks)

9. An energy saving fridge/freezer **saves 48%** of the consumption of electricity **per year** when compared with an old fridge/freezer.



a) If an old fridge/freezer consumes **295 kW of electricity in a year**, how much kW of electricity is saved by an energy saving fridge/freezer?

Ans: _____ kW

b) How much kW of electricity will the energy saving fridge/freezer consume in one year?

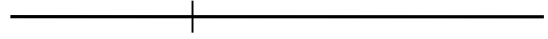
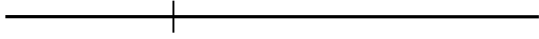
Ans: _____ kW

(4 marks)

10. a) **Draw and label** an angle of:

i) 75°

ii) 290°



b) i) Work out the size of angles a , b , c and d . Give reasons for your answers.

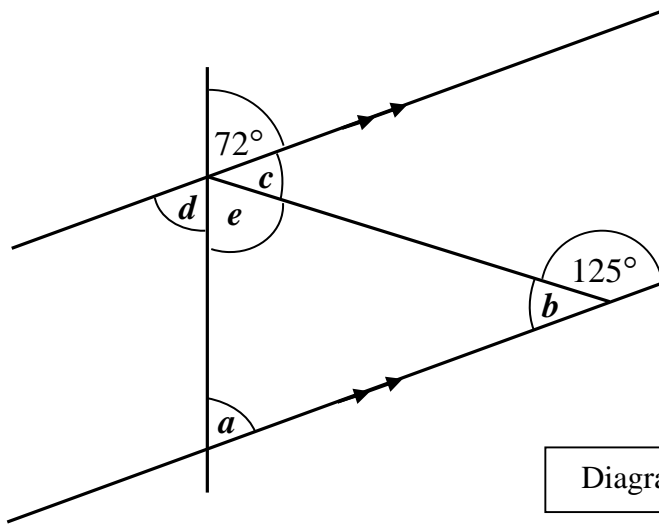


Diagram not drawn to scale

$a =$ _____^o reason: _____

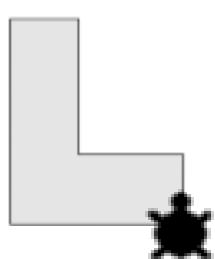
$b =$ _____^o reason: _____

$c =$ _____^o reason: _____

$d =$ _____^o reason: _____

ii) State the reason why $\angle a + \angle e = 125^\circ$: _____.

c) This question is about LOGO. Fill in the missing commands to form the given shape.



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PD  FD 60  LT 90  FD 85  _____ 90
      FD 120  _____ 90  FD 30  LT 90
      FD _____  LT 90  FD _____
    
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(14 marks)

11. a) Work out the following. Show all your working:

i) $1\frac{1}{3} + 3\frac{2}{5}$

ii) $5\frac{4}{7} - \frac{2}{5}$

Ans (i) = _____, (ii) = _____

- b) At a bazaar organized by the school students council €5000 were collected. From this sum €400 were used to pay the expenses and $\frac{4}{5}$ of the remaining sum of money was given to a charity organisation.

The **money left** was used to buy books for the school library.

- i) Find the amount of money given to charity.

Ans: € _____

- ii) Calculate the amount of money left for buying books.

Ans: € _____

(10 marks)

12. The following is a list of the height (in metres) of the tallest buildings in the world.

828 632 601 541 530 509
 492 484 452 452 450



Burj Khalifa, in Dubai, is the tallest building in the world.

a) From the above heights, work out:

i) **Mean, correct to two decimal places**

Ans: _____ m

ii) **Median**

Ans: _____ m

iii) **Mode**

Ans: _____ m

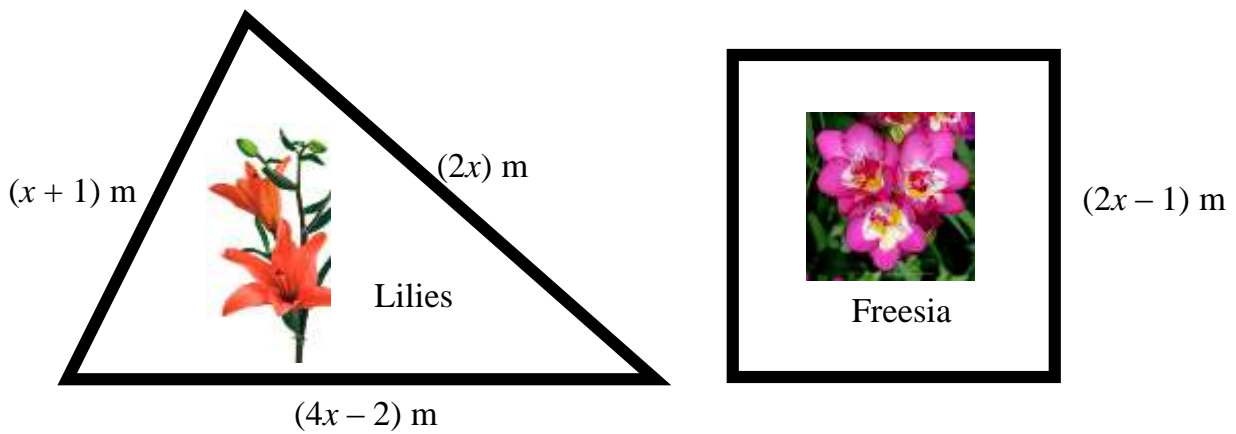
b) Show that the **range** of these buildings is 378 m.

c) Using the above list of heights, complete the frequency table:

Height of building (in metres)	Tally	Frequency
400 – 499		
500 – 599		3
600 – 699		
700 – 799		
800 – 899		

(8 marks)

13. Mr Cachia wants to plant some flowers in his large garden.
He wants to plant lilies in a triangular form and freesia in a square form like below:



- a) **Write and simplify** an expression for the **perimeter** of the lilies space.

Ans: _____

- b) **Write and simplify** an expression for the **perimeter** of the freesia space.

Ans: _____

- c) If both spaces have **equal perimeter**, **write an equation and solve it** to find the value of x .

Equation: _____

Working:

Ans: $x =$ _____

(7 marks)

END OF PAPER
