NATIONAL SPORT SCHOOL
ST CLARE COLLEGE

Mark

HALF-YEARLY EXAMINATION – 2014/15

Level 7 - 8

FORM 1 **MATHEMATICS** **TIME: 1 hr 30 min**

Main Paper

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	Main Paper	Non Calc	Total
Mark																

DO NOT WRITE ABOVE THIS LINE

Name: _____ **Class:** _____

Instructions:

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

1. For each of these numbers write down the value of the underlined digit.

   a) 24<u>8</u> _____

   b) 24.<u>8</u> _____

   c) <u>8</u>26.5 _____

   d) 0.734<u>8</u> _____

(4 marks)

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2. Write the following lengths in order of size, smallest first.

   6.2 cm, 0.5 cm, 0.8 cm, 1.1 m, 50 mm, 100 mm, 49 m, 103 cm

   _____

(2 marks)

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3. Write 108 as a product of prime factors.

Ans : _____

(3 marks)

4a) Look at this set of numbers:

27 10 2 15 36

Choose one number from the list which is :

i) An even number that is also a square number _____

ii) An odd number that is also a cube number _____

iii) A multiple of 3 _____

iv) A factor of 12 _____

v) The square root of 100 _____

b) List two 2-digit prime numbers that when reversed form the other prime numbers.

Ans : _____, _____

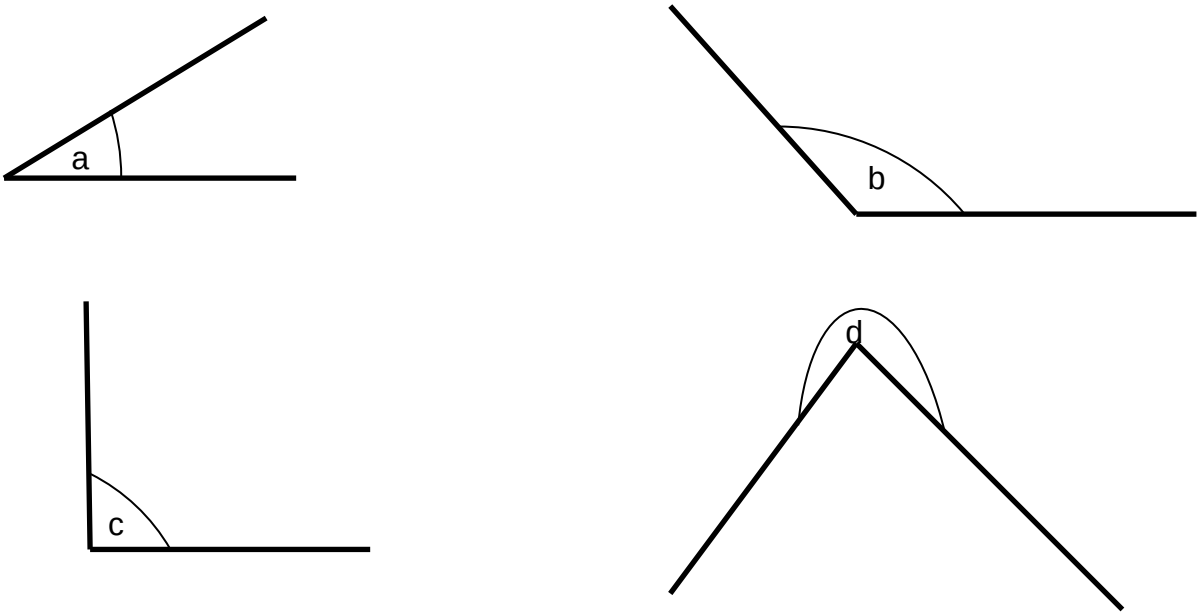
c) Is 1 a prime number? Explain why.

_____

_____

(9 marks)

5a) Write these angles in order of size, smallest first.



Angle ___ Angle ___ Angle ___ Angle ___

b) Measure the angles to see if you were correct.

Angle a = _____° Angle b = _____° Angle c = _____° Angle d = ____°

(5 marks)

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6. An aeroplane has 60 first class seats and 150 standard class seats.

a) Write the ratio first class seats : standard class seats and simplify it fully.

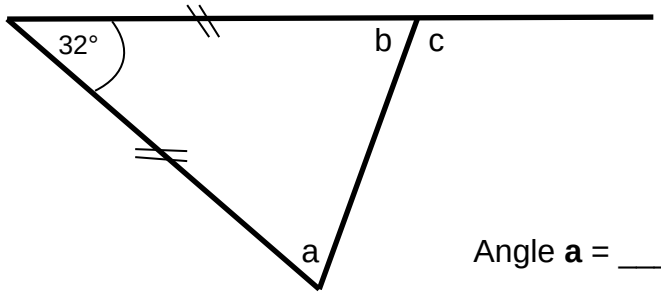
Ans : _____

b) Half of the first class seats and two thirds of the standard seats are occupied. What fraction of the seats on the aeroplane is <u>not</u> occupied?

Ans :_____

(5 marks)

7a) Find angles ***a***, ***b*** and ***c***, showing your workings clearly.

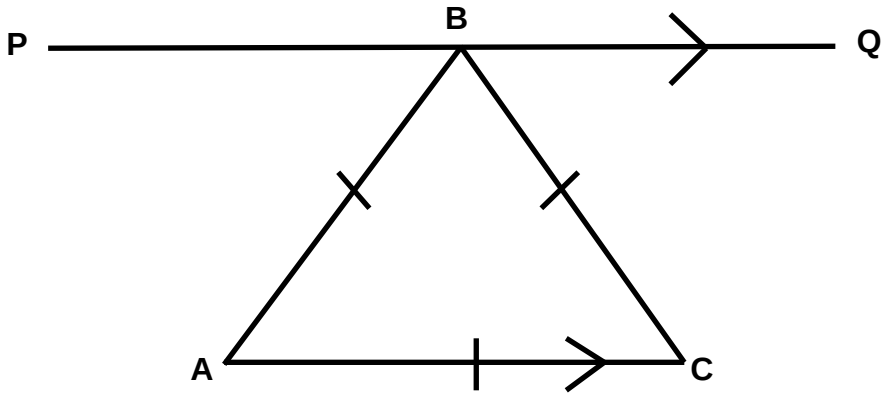


Angle **a** = _____

Angle **b** = _____

Angle **c** = _____

b) Look at the diagram and then answer the questions that follow:



i) What type of triangle is △ ABC? Ans: _____

ii) What is the size of angle ACB?

Ans : _____°

iii) Work out angle CBQ giving a reason for your answer:

Ans : _____°

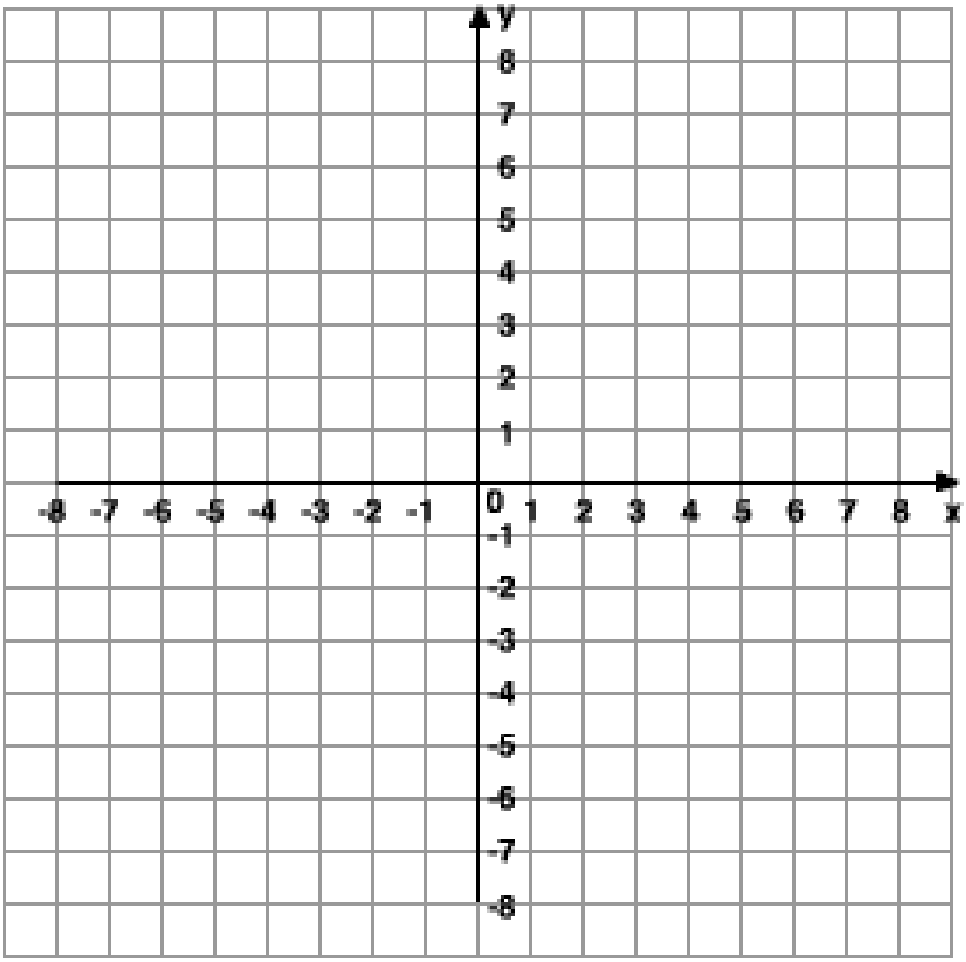
Reason : _____

(8 marks)

8) (a) Plot the co-ordinates A(7, 7), B(7, -5) and C(-5, -5).

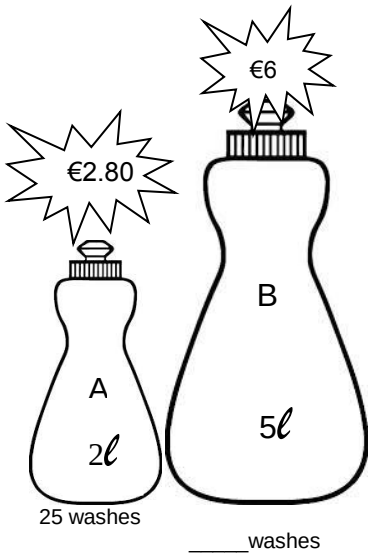
(b) Plot another point D so that ABCD is a square.

The co-ordinates of D are (,).



(5 marks)

9. Look at the following two washing liquid bottles A and B which come in different sizes.



(a) Work out, in milliliters, the amount of liquid used to do 1 wash using bottle A.

(Hint: First change 2 ℓ to ml).

_____ ml

(b) For bottle B, how much would you pay for 1 ℓ of washing liquid?

Ans: €_____

(c) Which of the two bottles (A or B) of washing liquid is the better buy?

Bottle _____

Reason: _____

_____

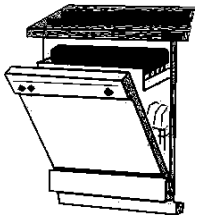
_____

(d) How many washes should one make using bottle B? Give your answer to a reasonable degree of accuracy.

Ans :_____washes

(8 marks)

10. A newly-wed couple decided to buy a fridge-freezer costing €320 and a cooker- hood costing €158. The couple has € 1000 to spend. Do they have enough money to include a dishwasher costing €425? Show your working.



(4 marks)

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11. (a) Last year, Jack went for a holiday from 30 **June** till 1 **August**.

How long was his holiday in days, if both days are included?

Ans: _____ days

(b) (i) Mosta buses leave the terminus every 20 minutes from 07:00. Justine arrives at the terminus at 07:25. How long will she wait for the next Mosta bus, if it leaves on time?

Ans : _____ minutes

(ii) How many Mosta buses leave the terminus by 10:00 am?

Ans : _____ buses

(6 marks)

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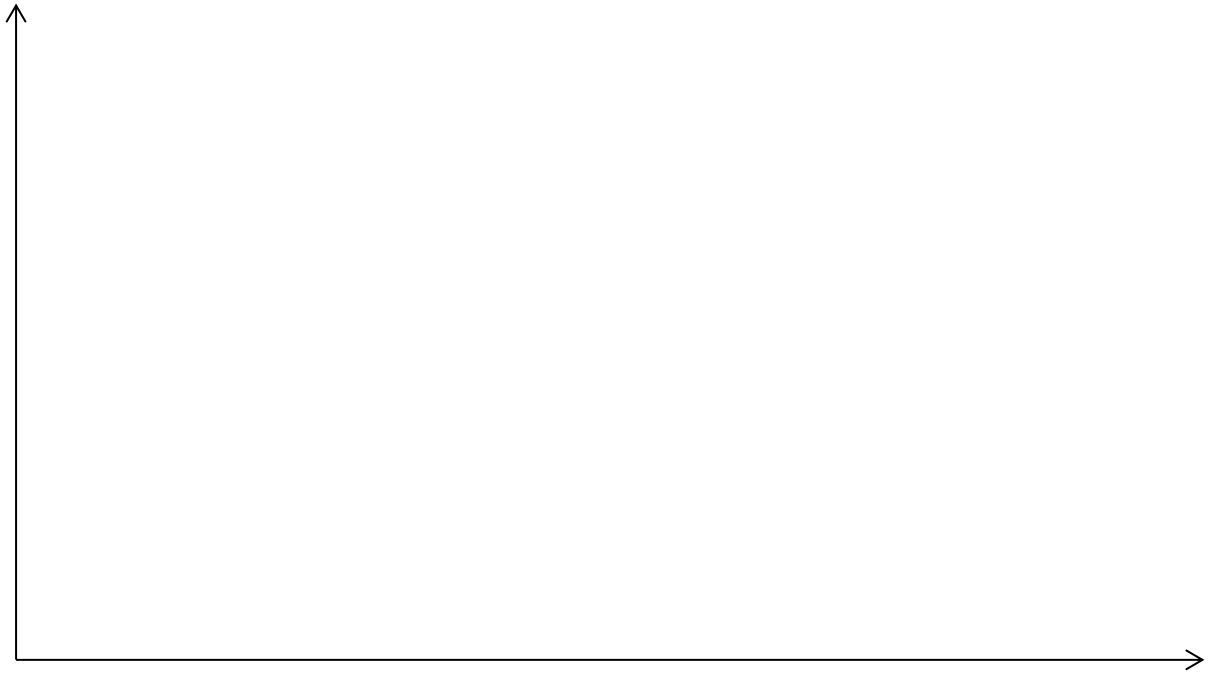
12. In the 1900 Census these were the ages of the residents of a small village.

1	4	6	9	12	17	33	42	51	60
2	4	7	10	13	17	36	44	55	66
3	5	8	10	15	23	36	46	56	67
3	6	8	11	16	24	37	49	56	69
4	6	9	11	17	25	40	49	59	75

a) Make a tally chart using groups 0-9, 10-19, and so on.

AGE	TALLY	FREQUENCY
0 – 9		
10 – 19		
20 – 29		
30 – 39		
40 – 49		
50 – 59		
60 – 69		
70 - 79		

b) Draw a bar chart to represent this data.

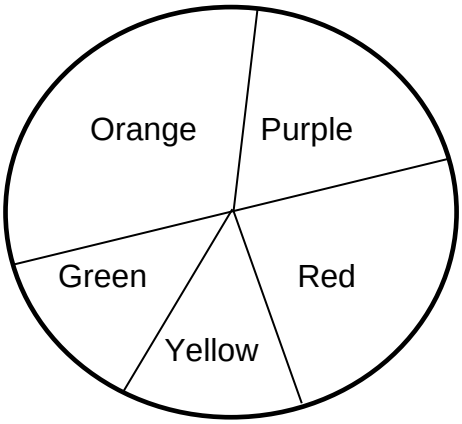


c) How many people lived in the village? Ans : _____

d) Which age group has the highest number of residents? Ans : _____

(8 marks)

13. The pie chart shows the colour of sweets in a packet of fruit drops.



a) State whether each of these statements is true or false.

i. There are more orange sweets than purple sweets. _____
ii. There are fewer green sweets than yellow sweets. _____
iii. A quarter of the sweets are red. _____
iv. There are more purple sweets than red sweets. _____
v. Half of the sweets are orange or purple. _____

b) Peter did a survey on where the pupils in his class spent their last summer holiday. He found out the following:

One half of the class had its holiday in England.
One third of the class had its holiday in Spain.
The rest had their holiday in France.

Draw a pie chart to show this information.

(8 marks)

The End