

KULLEGG SAN BENEDITTU Secondary School, Kirkop

Mark

HALF YEARLY EXAMINATION – 2016/2017

Track 3

YEAR 9

MATHEMATICS

TIME: 30 mins

Non Calculator Paper

Question	1	2	3	4	5	6	7	8	9	10	Total
Max. Mark	1	2	4	2	4	1	2	2	3	4	25
Mark											

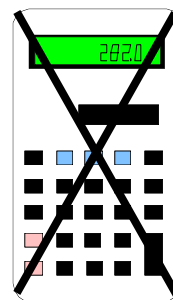
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Name: _____

Class: _____

Instructions to Candidates

- Answer all questions.
- This paper carries a total of 20 marks.
- Calculators and protractors are NOT ALLOWED.



1. Write down the median of: 5, 12, 7 and 9.

Ans: _____

(1 mark)

2. a) What is the reciprocal of $\frac{x}{y}$?

Ans: _____

- b) Factorise: $2xy - 4z + 8w$

Ans: _____

(2 marks)

3. a) Find the value of: i) $\left(\frac{1}{2}\right)^0 =$ _____ ii) $\left(\frac{1}{2}\right)^{-2} =$ _____

- b) Simplify: $(3p^2)^3$

Ans: _____

(4 marks)

4. Write in standard form:

- a) 570000

Ans: _____

- b) 0.057

Ans: _____

(2 marks)

5. Calculate:

$$2\frac{1}{2} \times \frac{7}{10} + 1\frac{1}{3}$$

Ans: _____

(4 marks)

6. Express the ratio 3 : 5 in the form $n : 1$

Ans _____

(1 mark)

7. Make r subject of the formula $v = 4r + u$.

Ans: $r =$ _____

(2 marks)

8. Continue the sequence for the next two terms:

$1 \times 3, 2 \times 4, 3 \times 5, \text{_____, _____}.$

(2 marks)

9. Give a rough estimate of: 67.3×23

Ans _____

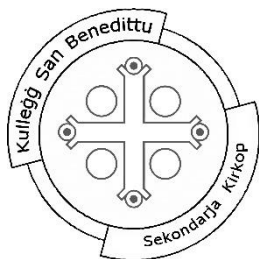
(3 marks)

10. Fill in:

Fraction	Percentage	Decimal
$\frac{3}{5}$		
	40%	

(4 marks)

END OF NON CALCULATOR PAPER



KULLEGG SAN BENEDITTU

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HALF YEARLY EXAMINATION – 2016/2017

Track 3

YEAR 9

MATHEMATICS

TIME: 1 hr 30 mins

Main Paper

Ques.	1	2	3	4	5	6	7	8	9	10	11	Main	NC	Global Mark
Max. Mark	6	8	7	3	11	4	3	11	5	10	7	75	25	100
Mark														

DO NOT WRITE ABOVE THIS LINE

Name: _____

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. (a) Two builders working together construct a house in 30 working days. How many days will the house take to construct if 5 builders work on it? Assume that all the builders work at the same rate.

Answer: _____ days

- (b) Find x in the following:

$$24 : 64 = 3 : x$$

Answer: $x =$ _____

(6 marks)

2. (a) Simplify:

(i) $\frac{x^2}{3x-x^2}$

Answer: _____

(ii) $\frac{a-b}{(b-a)(b-2a)}$

Answer: _____

(b) The length of a rectangle is 6 cm more than its width and its perimeter is 48 cm.

(i) Form an equation from the above information

Answer: _____

(ii) Find the **width** of the rectangle.

Answer: _____ cm

(8 marks)

Name: _____

Class: _____

3. Bob works in the construction industry. He is to make a mixture of which 28% is cement, twice as much is sand and the rest is powdered marble.

(a) What percentage of the mixture is powdered marble?

Answer: _____%

(b) Write down the ratio of **cement : sand : powdered marble** in the simplest form.

Answer: _____

(c) How many kg of powdered marble are there in a mixture weighing 50 kg?

Answer: _____ kg

(7 marks)

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4. A store is offering a sale of 35% on all items. Marlene bought a washing machine at a sale price of €351. Calculate the cost of the washing machine before the sale.

Answer: € _____

(3 marks)

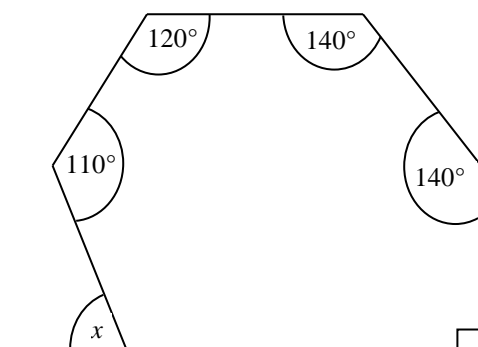
5. (a) Find the size of the interior angle of a regular hexagon.

Answer: _____ °

- (b) Each interior angle of a regular polygon is 156° . How many sides does this polygon have?

Answer: _____ sides

- (c) Find the size of the angle marked x in the diagram.



Answer: $x =$ _____ °

(11 marks)

6. a) Expand and simplify: $(x + 5)(x - 7)$

Answer: _____

- b) Simplify: $\frac{4a^2 \times 3b^3}{2b}$

Answer: _____

(4 marks)

7. Calculate the sum of money invested in a bank paying $4\frac{1}{2}\%$ per annum simple interest, if, after 6 years, the interest paid is €3645.

Answer: € _____

(3 marks)

8. Sticks were used to make the shapes below.



Shape 1



Shape 2



Shape 3



Shape 4

(a) Complete the following table.

Shape Number	1	2	3	4	5
Number of Sticks	3		7		

(b) Find the number of sticks in:

(i) Shape 100

Answer: _____

(ii) Shape n

Answer : _____

(c) One of the shapes in the sequence has 321 sticks. What is its shape number?

Answer: _____

(d) Is there a shape in the sequence having 240 sticks? Explain your reasoning.

Answer: _____

Reason: _____

(11 marks)

9. Brenda took a record of the number of people in each household in her street. Her results are shown in the table.

Number of People	1	2	3	4	5	6
Frequency	3	11	13	15	5	3

- (a) How many households are there in Brenda's street?

Answer: _____

- (b) What is the modal number of people in each household?

Answer: _____

- (c) Find the mean number of people per household in the street.

Answer: _____

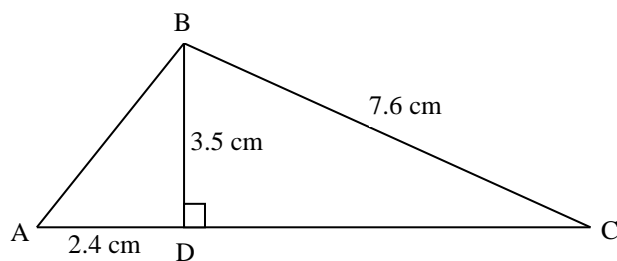
(5 marks)

10. Solve: $\frac{2x+4}{4} + \frac{x}{2} = 2$

Answer: _____

(4 marks)

11. From the following diagram work out, correct to 1 decimal place:



(a) AB

(b) DC

Answer: _____ cm

Answer: _____ cm

(6 marks)

12. (a) Solve

$$4x - 2(1 - 3x) = 3 - (2x - 1)$$

Answer $x =$ _____

- (b) Solve the equation $x^2 - \frac{2}{x} = 6$, correct to 1 decimal place, using the trial and improvement method.

x	Working	Answer	small/large
2	$2^2 - \frac{2}{2}$	3	<i>small</i>

Answer: $x =$ _____

(7 marks)

End of Main Paper