KULLEĠĠ SAN BENEDITTU
Secondary School, Kirkop

Mark

HALF YEARLY EXAMINATION – 2016/2017

Track 2

YEAR 9 **MATHEMATICS** **TIME: 30 mins**

Non Calculator Paper

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

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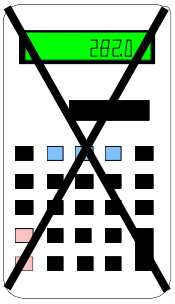
Name: _____ ***Class***: _____

INSTRUCTIONS TO CANDIDATES:



- **Answer ALL questions.**
- **This paper carries a total of 25 marks.**
- **Calculators and protractors are NOT ALLOWED.**

1. Fill in:

a) 5 cm = _____ mm

b) 1.21 kg = _____ g

c) 1.25 hours =_____ minutes

(4 marks)

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2. Write this ratio in its simplest form.

€63 : €36

Ans:_____

(1 mark)

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3. On a radio commercial, the price of a TV set was discounted from €500 to €400.

Work out the percentage reduction.

Ans:_____%

(3 marks)

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4. At a steady speed of 19km/h, a motorboat travels for 95 kilometres.

How long did the speedboat take for this trip?

Ans:_____

(2 marks)

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5. a) Factorise fully:

$$12t + 18p = \_\_\_\_ (\_\_\_\_t + \_\_\_\_p)$$

b) Multiply out the brackets:

$$4(2p - 3q) = \_\_\_\_\_$$

(5 marks)

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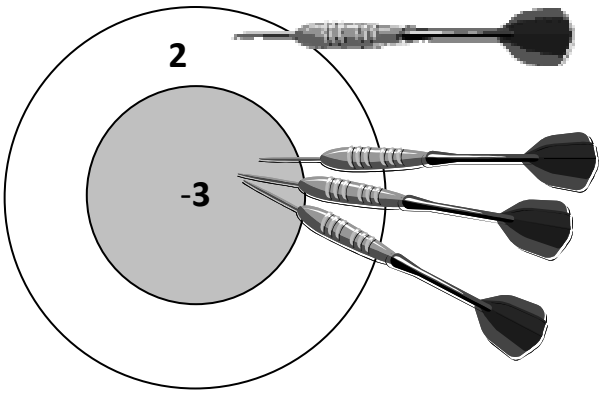
6. Paul thinks of a number and **multiplies** it by **3**. He **subtracts** 8 and the answer is now 16. What was the number that he first thought of?

Ans:_____

(3 marks)

7.



What is the final score on this dartboard?

Ans:_____

(3 marks)

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8. $(2x)^2$ means

a) $2 \times x \times x$ b) $2 \times x \times 2$ c) $2x \times 2x$

Ans:_____

(1 mark)

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9. The list below shows the ages in years of a group of students going for an outing:

16, 14, 12, 12, 14, 12, 11, 11, 15, 16

a) What is the modal age?

Ans:_____

b) What is the median age?

Ans:_____

(3 marks)

END OF NON CALCULATOR PAPER

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HALF YEARLY EXAMINATION – 2016/2017

Track 2

YEAR 9 **MATHEMATICS** **TIME: 1 hr 30 mins**

Main Paper

Ques.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Main	NC	**Global Mark**
Max. Mark	4	5	5	6	5	8	6	6	10	6	8	6	**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) Use you calculator to work out the value of: $\dfrac{246 \times 19}{(593 - 392)}$

Give you answer to **the nearest 10**.

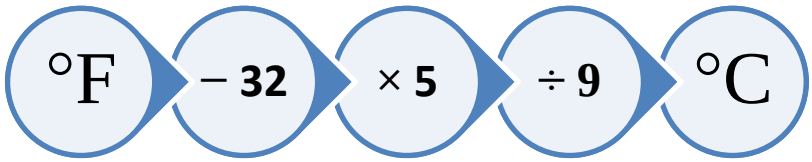
Answer: _____

(b) Use estimation to check your answer in **(a)**. Show each step of your working.

Answer: _____

(4 marks)

2. Stephan uses this number machine to change the temperature from degrees Fahrenheit (°F) to degrees Celsius (°C).



In a cake recipe, the temperature needed to cook a cake is 350°F. What is the temperature in °C? Give your answer to 2 d.p.

Answer: _____ °C

(5 marks)

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3. (a) Write 6.4×10^4 as an ordinary number.

Answer: _____

(b) Write 0.0039 in standard form.

Answer: _____

(d) Work out $(3.2 \times 10^5) \times 4.5$ in standard form.

Answer**:** _____

(5 marks)

Name: _____ Class: _____

4. (a) Work out the **range** and the **mean** of 9, 12, 18 and 21.

Range: _____

Mean: _____

(b) The mean of the numbers 12, 24 and x is the **same** as the mean of 9, 12, 18 and 21. Find the value of x.

Answer: x = _____

(6 marks)

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5. Mr. Thompson is on a diet.

He currently weighs 120 kg but is losing 2 kg per month.

(a) Form an equation that represents Mr. Thompson's weight W after m months.

W = _____

(b) After how many months will Mr. Thompson reach his desired weight of 90kg?

Answer: _____ months

(5 marks)

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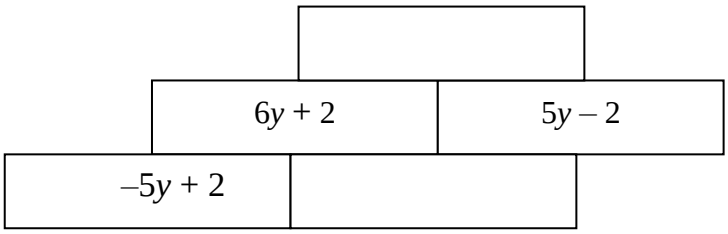
6. (a) Simplify:

i) $8c + 5c^2 - 2c =$ _____

ii) $5a \times -(3b) =$ _____

iii) $2q \times q =$ _____

(c) Each expression is the ***sum*** of the two expressions in the bricks below. Fill in the remaining two bricks.



(d) Open up the brackets and simplify: $3(6x - 10) - 5(x - 3)$

Answer: _____

(8 marks)

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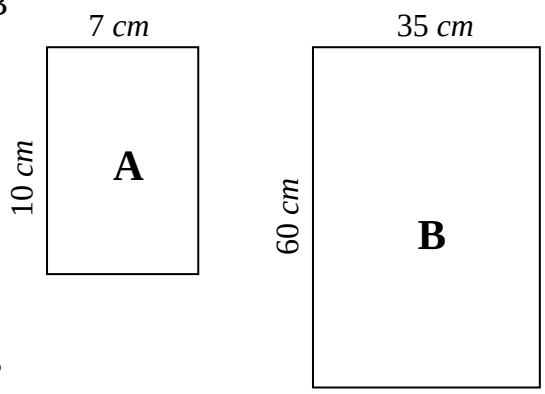
7. a) Write down and **simplify** these ratios

i) length of rectangle A: length of rectangle B

_____:_____



ii) width of rectangle A: width of rectangle B

_____:_____

b) Are the rectangles similar? Why?

_____

_____

(6 marks)

Name: _____ Class: _____

8. The following is a 5-day weather forecast for London over a particular week.

5 DAY FORECAST | NEXT 24 HOURS

Day	Weather	Max. Day (°C)	Min. Night (°C)	Wind (mph)	Humidity Pressure Visibility
Wed	 Sunny Intervals	6	0	5	73% 1010mb Moderate
Thu	 Light Rain Shower	5	-1	8	79% 1006mb Moderate
Fri	 Sunny Intervals	3	-1	7	70% 1012mb Very good
Sat	 Sleet Shower	2	0	11	73% 1008mb Very good
Sun	 Sunny Intervals	2	-4	9	81% 1010mb Very good

(a) On which day will there be the warmest temperature during the day?

Answer: _____

(b) On which day will there the coldest temperature during the night?

Answer: _____

(c) What will be the drop in temperatures between day and night on Thursday?

Answer: _____

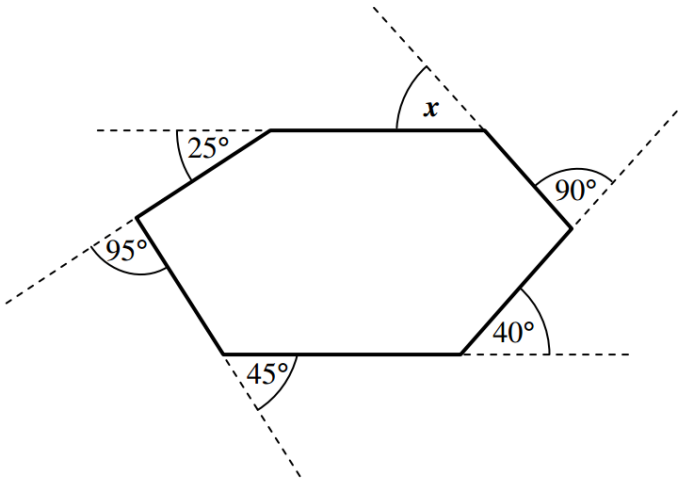
(d) When will there be the least drop in temperature between day and night?

Answer: _____

(6 marks)

9. (a) The sum of the exterior angles of any polygon is _____°.

(b) Calculate the size of angle *x*



Angle *x* = _____°

(c) This is a regular-shaped traffic sign.

Calculate the size of an interior angle *y*.

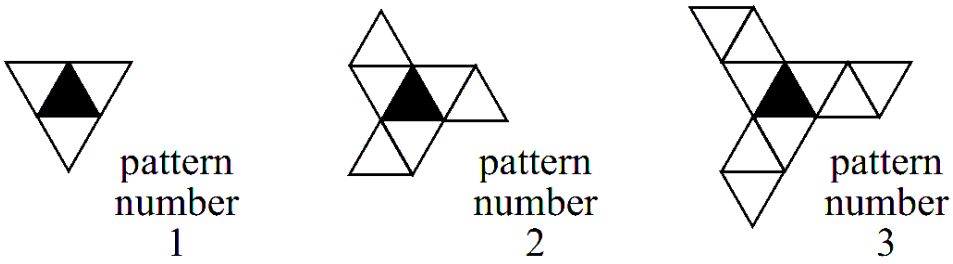
Angle *y* = _____°

(d) Fill in this LOGO procedure which draws an octagon of side 40 turtle steps:

REPEAT _____ [FD _____ RT _____]

(10 marks)

10. Jeff makes a sequence of patterns with black and white triangular tiles



The rule for finding the number of tiles in pattern number N in Jeff's sequence is:

Number of tiles = 1 + 3N

a) The **1** in this rule represents the number of black tiles.
What does the **3N** represent?

Answer: _____

b) Jeff makes pattern number 12 in this sequence.
How many black tiles and how many white tiles does he use?

Black tiles: _____

White tiles: _____

c) Jeff uses 61 tiles altogether to make a pattern in his sequence.
What is the number of the pattern he makes?

Answer: _____

(6 marks)

11. A group of **220 teenagers** were asked to state their most preferred social network. The results were written in the table below.

Fill in the missing parts. Show all your working.

Preferred Social Network	Percentage of teenagers	Number of teenagers
Facebook	30%	
Snapchat	25%	
Instagram	20%	
Twitter	15%	
WhatsApp		
Altogether		

(8 marks)

12. (a) Draw a circle with centre O and radius 6 cm.

(b) Inscribe a regular hexagon inside the circle. Measure one side of the hexagon and hence calculate the perimeter of the hexagon.

Perimeter = _____cm

(6 marks)

End of Paper

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