

**KULLEĠĠ SAN BENEDITTU**  
**Boys Secondary School, Kirkop**

**Levels**  
**7-8**

**HALF-YEARLY EXAMINATIONS – FEBRUARY 2014**

**FORM 2**

**MATHEMATICS**

**TIME: 1 h 30mins**

**Levels 7-8**

**Main Paper**

| <b>Quest.</b>    | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7</b> | <b>8</b> | <b>9</b> | <b>10</b> | <b>11</b> | <b>12</b> | <b>13</b> | <b>Main</b> | <b>NC</b> | <b>Global Mark</b> |
|------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-------------|-----------|--------------------|
| <b>Max. Mark</b> |          |          |          |          |          |          |          |          |          |           |           |           |           | <b>75</b>   | <b>25</b> | <b>100</b>         |
| <b>Mark</b>      |          |          |          |          |          |          |          |          |          |           |           |           |           |             |           |                    |

**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. a) Write each of the following numbers as a product of their prime factors:  
15, 20 and 25.

Ans: 15 = \_\_\_\_\_

20 = \_\_\_\_\_

25 = \_\_\_\_\_

- b) Three bells ring together at 6 a.m. If Bell A rings every 15 minutes, Bell B rings every 20 minutes and Bell C every 25 minutes, at what time will they next ring together?

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

(5 marks)

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2. Use your calculator to work out the following:

a)  $\left(\frac{2}{3} + \frac{1}{6}\right) \times \left(\frac{3}{4} - \frac{5}{8}\right)$

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

b)  $\sqrt{300 \times 3} - 2^3$

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

c)  $\frac{2}{7}$  of €350

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

(6 marks)

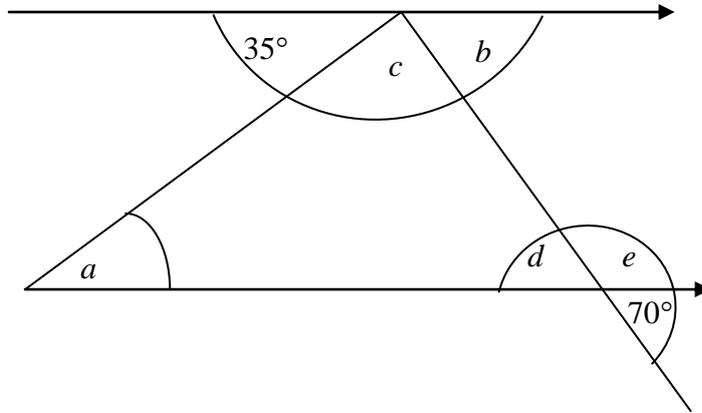
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Name : \_\_\_\_\_

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3. Find the size of the marked angles and give reasons for your answers.



$\angle a =$  \_\_\_\_ Reason: \_\_\_\_\_

$\angle b =$  \_\_\_\_ Reason: \_\_\_\_\_

$\angle c =$  \_\_\_\_ Reason: \_\_\_\_\_

$\angle d =$  \_\_\_\_ Reason: \_\_\_\_\_

$\angle e =$  \_\_\_\_ Reason: \_\_\_\_\_

(10 marks)

4. Match the three pairs of equivalent fractions

a)  $\frac{3}{6}$   $\frac{15}{20}$

b)  $\frac{75}{100}$   $\frac{5}{10}$

c)  $\frac{3}{5}$   $\frac{12}{20}$

(3 marks)

5. Mariah covers a distance of 1500 m to go to school from home. She travels



$\frac{1}{4}$  of the distance on foot

$\frac{3}{5}$  of the distance by bus

and jogs the remaining distance to school.

a) How many metres **altogether** does Mariah travel on foot and by bus?

Ans: \_\_\_\_\_m

b) What **fraction** does she jog?

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

c) How many metres does she jog?

Ans: \_\_\_\_\_m

(6 marks)

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

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6. The following are the heights in metres of a group of students in Form 4. The heights are given in order of size:

|      |      |      |      |      |
|------|------|------|------|------|
| 1.51 | 1.53 | 1.54 | 1.55 | 1.56 |
| 1.58 | 1.58 | 1.60 | 1.62 | 1.63 |
| 1.67 | 1.71 | 1.72 | 1.73 | 1.74 |
| 1.75 | 1.77 | 1.82 | 1.83 | 1.86 |

- a) Complete the following table:

| Height, m, metres  | Frequency |
|--------------------|-----------|
| $1.5 \leq h < 1.6$ | 7         |
| $1.6 \leq h < 1.7$ |           |
| $1.7 \leq h < 1.8$ |           |
| $1.8 \leq h < 1.9$ |           |
| Total              |           |

- b) How many pupils are **shorter** than 1.7 m?

Ans: \_\_\_\_\_ pupils

- c) How many pupils are **at least** 1.7 m tall?

Ans: \_\_\_\_\_ pupils

(6 marks)

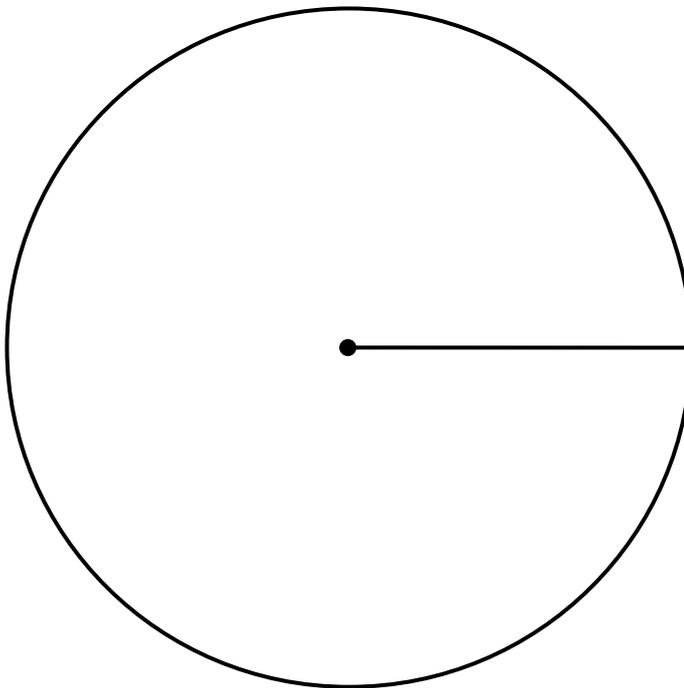
7. The following table shows the hours allocated for each subject during a particular week:

| <b>Subject</b> | <b>Maths</b> | <b>English</b> | <b>Science</b> | <b>History</b> | <b>P.E.</b> |
|----------------|--------------|----------------|----------------|----------------|-------------|
| Hours          | 4 hours      | 5 hours        | 3 hours        | 2 hours        | 1 hour      |

- a) Find the **total** number of hours.

Ans: \_\_\_\_\_hrs

- b) Complete the pie chart below to represent this information:



(8 marks)

8. Arrange in ascending order:

- a) 33%,  $\frac{1}{2}$ , 35%, 0.65,  $\frac{1}{3}$

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

b) Complete the following table:

| Fraction      | Decimal | Percentages      |
|---------------|---------|------------------|
| $\frac{3}{8}$ |         |                  |
|               | 0.82    |                  |
|               |         | $2\frac{1}{4}\%$ |

(6 marks)

9. A shop reduces its prices by 10% in a sale.

- a) What is the sale price of a shirt marked €85?



Ans: € \_\_\_\_\_

- b) Express 350 cm as a percentage of 5 m.

Ans: \_\_\_\_\_ %

(5 marks)

10. a) Expand:  $3(2x - 5)$

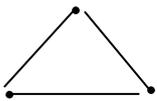
Ans: \_\_\_\_\_

b) Factorise fully:  $15xy - 45z$

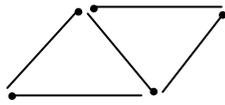
Ans: \_\_\_\_\_

(4 marks)

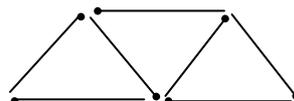
11. Victoria uses matches to form the following shapes:



Shape 1



Shape 2



Shape 3

a) Draw the next shape

b) Help Victoria fill the table below:

| Shape Number       | 1 | 2 | 3 | 4 | 5 |
|--------------------|---|---|---|---|---|
| No. of Matchsticks | 3 | 5 |   |   |   |

c) Find the *n*th term.

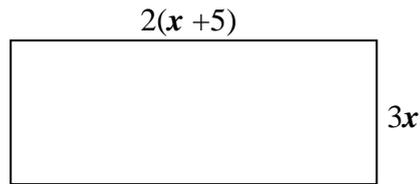
Ans: \_\_\_\_\_

d) How many matchsticks does Victoria need for Shape 50?

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

(8 marks)

12.



a) Find an **expression** for the perimeter of the rectangle.

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

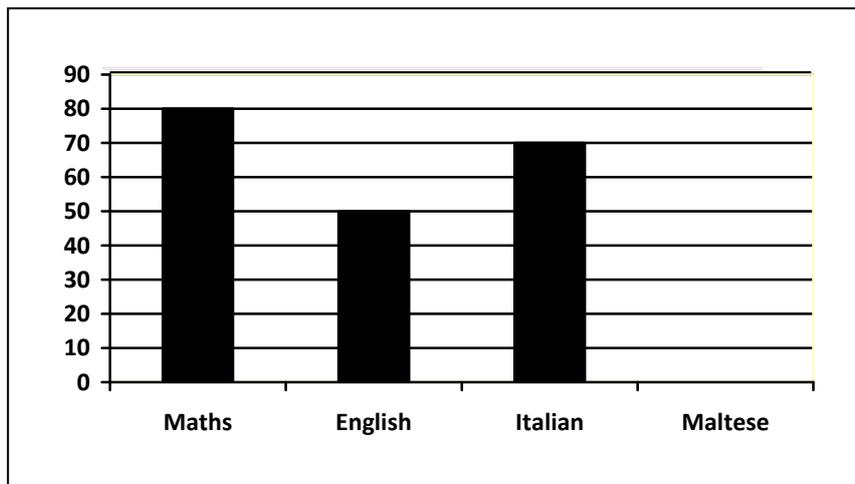
b) Find the perimeter when  $x = 3$  cm.

Ans: \_\_\_\_\_ cm

(4 marks)

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13. The following bar chart shows the results that John obtained in his annual exams.



a) What mark did he obtain in Maltese mark if his **average** mark was 65?

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

b) Draw the bar for the Maltese mark in the bar chart.

(4 marks)

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**END OF EXAM**