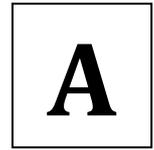


KULLEĠĠ SAN BENEDITTU
Boys Secondary School, Kirkop



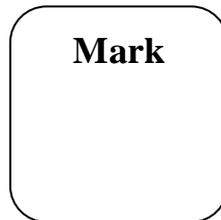
HALF-YEARLY EXAMINATIONS – FEBRUARY 2014

FORM 4

MATHEMATICS Scheme A

TIME: 20 mins

Non Calculator Paper



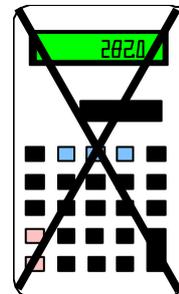
DO NOT WRITE ABOVE THIS LINE

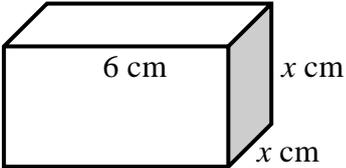
NAME AND SURNAME: _____ **CLASS:** _____

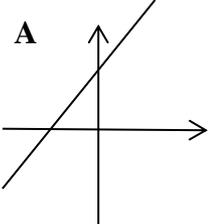
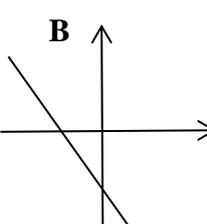
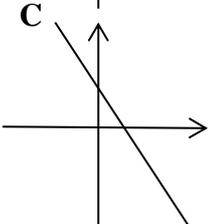
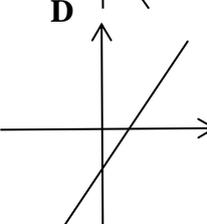
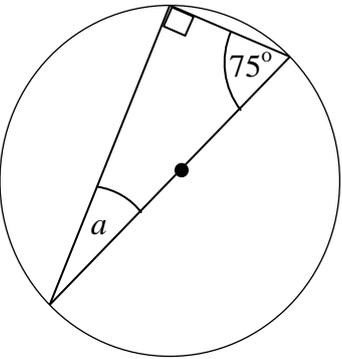
INSTRUCTIONS TO CANDIDATES:

Read all the questions carefully before you start answering.

- Answer all questions.
- This paper carries 20 marks.
- **Calculators, protractors** and other mathematical instruments are **NOT ALLOWED**.
- On your desk you should have nothing except for **pen, pencil, ruler** and the **examination paper**.
- You are not required to show your working. However, space for working is provided if you need it.



No.	Question	Space for working, if required.
1	If $x = \frac{ab^2}{c}$, find x when $a = -1$, $b = -2$ and $c = 2$. <div style="text-align: right;">_____</div>	
2	Express $\left(\frac{2}{3}\right)^{-2}$ as an improper fraction . <div style="text-align: right;">_____</div>	
3	Given that 2^{10} is approximately equal to 1000, Then, 1 000 000 is approximately equal to 2^n . What is the value of n ? <div style="text-align: right;">$n =$ _____</div>	
4	Given that $\frac{15.3 \times 12.4}{5.1 \times 31} = 1.2$ Find the value of : $\frac{1.53 \times 1.24}{5.1 \times 0.31}$ <div style="text-align: right;">_____</div>	
5	The cost of a ticket is reduced from €25 to €20. What is the percentage decrease? <div style="text-align: right;">_____</div>	
6	Evaluate: $(6.8)^2 - (3.2)^2$ <div style="text-align: right;">_____</div>	
7	Fill in the missing command needed to draw an equilateral triangle of sides 30 turtle steps. <p style="text-align: center;">PD REPEAT 3[FD 30 RT _____]</p>	
8	<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>The volume of this cuboid is 54 cm^3. Find the value of x.</p> <div style="text-align: right;">_____</div> </div> </div>	

<p>9</p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>A</p>  </div> <div style="text-align: center;"> <p>B</p>  </div> <div style="text-align: left;"> <p>Which of these graphs is the best sketch of the line with equation $y = -3x + 2$?</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>C</p>  </div> <div style="text-align: center;"> <p>D</p>  </div> </div> <p style="text-align: right; margin-top: 20px;">_____</p>	
<p>10</p>	<p>Convert:</p> <p style="text-align: center;">2.5 m^2 to cm^2</p> <p style="text-align: right;">_____ cm^2</p>	
<p>11</p>	<p>Simplify:</p> $\sqrt{\frac{49x^3y^4}{x}}$ <p style="text-align: right;">_____</p>	
<p>12</p>	<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>Find the value of <i>a</i>.</p> <p style="text-align: right;">_____ °</p> </div> </div>	
<p>13</p>	<p>Make <i>a</i> subject of the formula.</p> $v = u + at$ <p style="text-align: right;">$a =$ _____</p>	
<p>14</p>	<p>Give all the solutions to:</p> $(x - 2)(x + 3) = 0$ <p style="text-align: right;">$x =$ _____</p>	

15	<p>Factorise completely:</p> $2x^2 - 8$ <p style="text-align: right;">_____</p>	
16	<p>Find the value of:</p> $\frac{2 \times 10^3}{4 \times 10^5}$, giving your answer in standard form . <p style="text-align: right;">_____</p>	
17	<p>Write the positive solution to:</p> $(x + 2)^2 = 25$ <p style="text-align: right;">$x =$ _____</p>	
18	<p>Find the value of D in this factor tree diagram.</p> <div style="text-align: center;"> <pre> graph TD D --- B D --- C B --- A B --- 2 A --- 3 A --- 2 C --- 3 C --- 5 </pre> </div> <p style="text-align: right;">_____</p>	
19	<p>$3^3 + 3^3 + 3^3$ is equivalent to:</p> <p>(A) 3^4 (B) 9^3 (C) 3^9 (D) 27^3</p> <p style="text-align: right;">_____</p>	
20	<p>Kimberly tried to solve the quadratic equation:</p> $x^2 + 5x = 6$ <p>These are the steps she took. In which of the steps did she make a mistake?</p> <p>Step 1: $x^2 + 5x - 6 = 0$ Step 2: $(x + 3)(x + 2) = 0$ Step 3: Either $(x + 3) = 0$ or $(x + 2) = 0$ Step 4: $x = -3$ or $x = -2$</p> <p style="text-align: right;">_____</p>	