

Model test in Algebra and Trigonometry  
For the 1<sup>st</sup> secondary stage – First term 2018 / 2019  
Merge students

Answer the following questions

First Question: Choose the correct answer from those given:

- (1)  $i^6 = \dots\dots\dots$   
(a) -1 (b) 1 (c) 6
- (2) The solution set of the equation :  $x^2 + 1 = 0$  in  $R$  is .....
- (a)  $\{-1\}$  (b)  $\{1\}$  (c)  $\emptyset$
- (3) The roots of the equation :  $x(x - 3) = 0$  are .....
- (a) Real and different (b) equal (c) Not real
- (4) The function  $f: f(x) = x - 2$  is positive in the interval .....
- (a)  $]2, \infty[$  (b)  $] -\infty, 2[$  (c)  $] -2, 2[$
- (5) If  $\tan \theta = 1$  , such that  $\theta$  is the measure of an acute angle, then  $\theta = \dots\dots\dots^\circ$   
(a) 30 (b) 45 (c) 60

Second Question: Complete the following:

- (1) The function :  $f(x) = -5$  is negative in the interval .....
- (2) The angle of measure  $88^\circ$  lies in the ..... quadrant.
- (3) The smallest positive measure for the angle of measure  $-60^\circ$  equals .....
- (4) The equation:  $(x + 5)(x - 5) = 0$  is of ..... degree.
- (5) In  $\Delta ABC$  : if  $m(\angle A) = 60^\circ$  ,  $m(\angle B) = \frac{\pi}{2}$  , then  $m(\angle C) = \dots\dots\dots^\circ$  .

**Third Question: Match from column A with the suitable from column B**

Column (A)

Column (B)

|     |  |   |
|-----|--|---|
| (1) | The solution set of the inequality: $x^2 - 1 < 0$ in $R$ is .....                  | ■ |
| (2) | The roots of the equation: $x^2 - 2x + k = 0$ are equal when $k = \dots\dots\dots$ | ■ |
| (3) | The sum of the roots of the equation: $x^2 + 4x + 3 = 0$ equals .....              | ■ |
| (4) | The solution set of the inequality: $(x + 2)(x - 1) \leq 0$ in $R$ is .....        | ■ |
| (5) | $\sin 180^\circ + \cos 180^\circ = \dots\dots\dots$                                | ■ |

|   |         |
|---|---------|
| ■ | 1       |
| ■ | ]-1, 1[ |
| ■ | -1      |
| ■ | -4      |
| ■ | [-2, 1] |

**Fourth Question: Complete the steps in each of the following:**

(1)  $(3 + i)(3 - i) = 9 - \dots\dots\dots = \dots\dots\dots$

(2) The equation whose roots are 3 and 5 is :  $x^2 - (\dots\dots\dots)x + \dots\dots\dots = 0$

(3) The radian measure of the central angle which subtended an arc whose length is 8 cm in the circle whose radius is 4cm equals:

$$\theta^{rad} = \frac{\dots\dots\dots}{\dots\dots\dots} = \dots\dots\dots rad$$

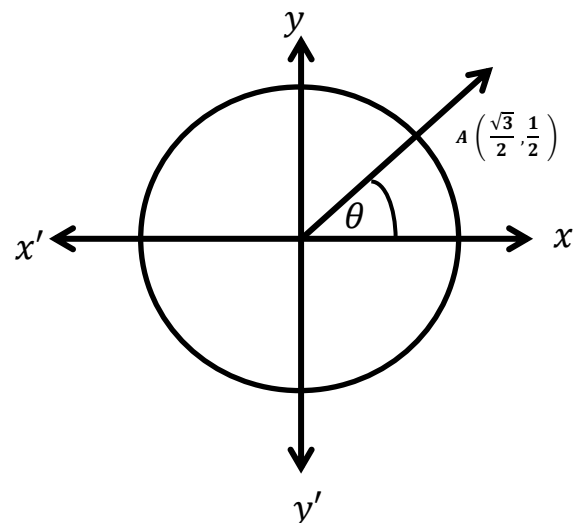
(4) If  $\sin 10^\circ = \cos \theta$ ,  $\theta \in ]0^\circ, 90^\circ[$ , then

$$10 + \theta = \dots\dots\dots^\circ \therefore \theta = \dots\dots\dots^\circ$$

(5) The opposite figure represents the angle  $\theta$  in its standard position such that its terminal side

intersects the unit circle at the point  $A \left( \frac{\sqrt{3}}{2}, \frac{1}{2} \right)$

,then :  $\tan \theta = \frac{1}{2} \div \dots\dots\dots = \dots\dots\dots$



**End of Test**

**(Best wishes)**