FINAL REVISION (2)

FIRST TERM

FORM 10

MATHS

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Final Revision (2)

Choose the correct answer:

1) If one of the two roots of the equation:

$x^2 - (m - 1)x + 5 = 0$ ***is additive inverse of the other,***

then $m =$ .....

a) -1 ***b) 1*** ***c) -5*** ***d) 5***

2) If M , $3 - M$ are the two roots of the function $x^2 - kx - 7 = 0$, then $k =$ ..

a) -3 b) 3 c) -7 d) 7

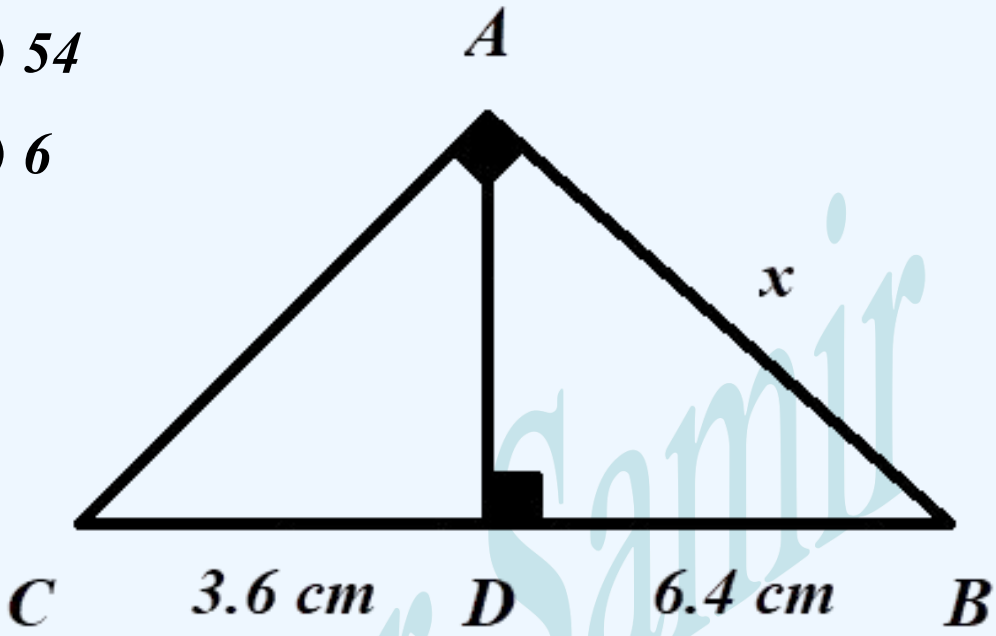
3) If $\csc\theta > 0$, $\cos\theta < 0$, then θ lies in the ..... quadrant.

a) first b) second c) third d) fourth

4) ***In the opposite figure:*** *Δ ABC is right angled triangle at A , $\overline{AB} \perp \overline{BC}$ then x = ... cm*

a) 72 *b) 54*

c) 8 *d) 6*



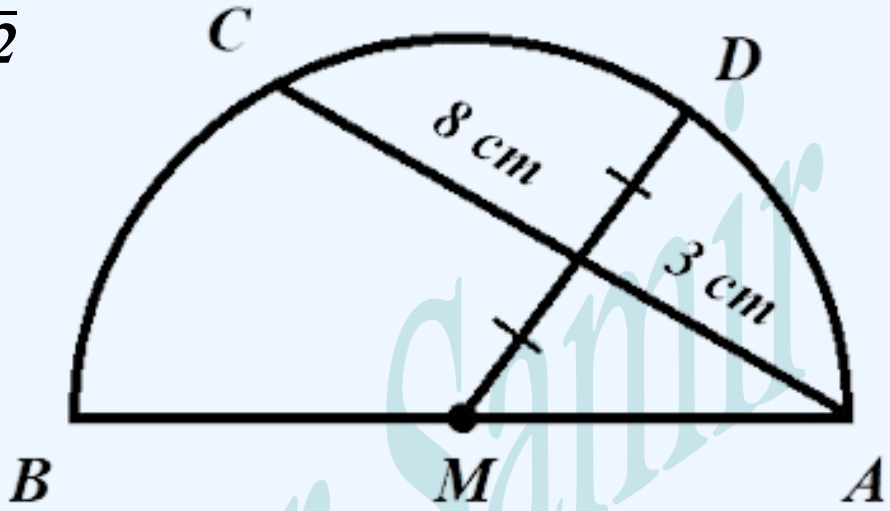
5) ***In the opposite figure:***

A semicircle of center M , MH = HD , AH = 3 cm ,

HC = 8 cm, then the radius length = .. cm

a) $2\sqrt{2}$ ***b)*** $4\sqrt{2}$

c) 4 ***d) 8***



6) *The solution set of the equation* $x^2 - 4 = 0$ *in C*

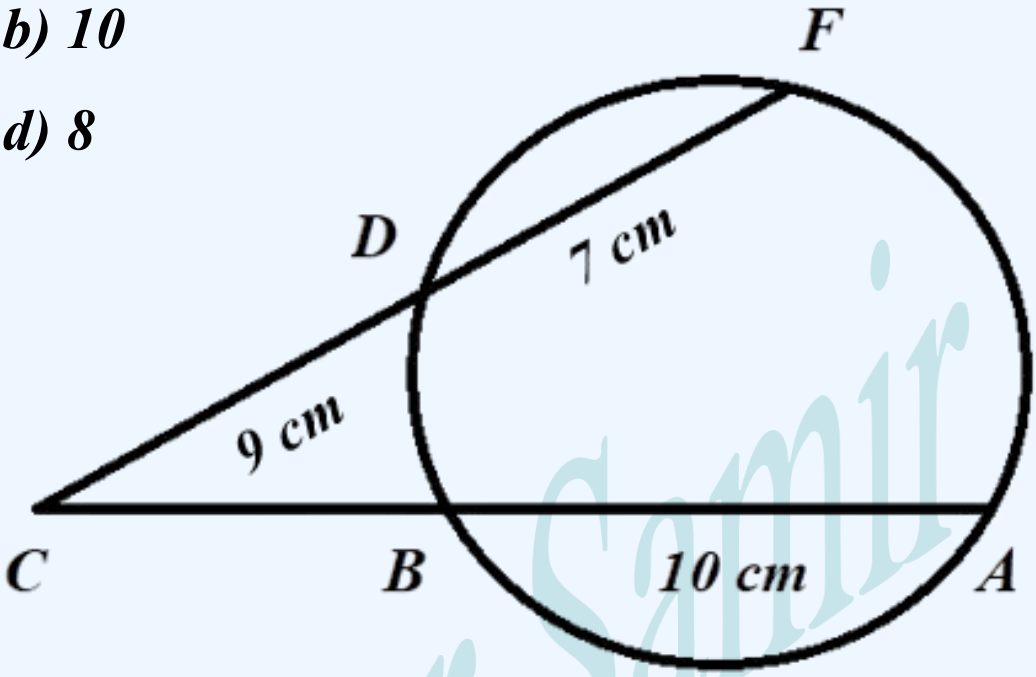
(where C is the complex numbers) is .....

a) {-2} *b) {2i , -2i}* *c) {2 , -2}* *d) Φ*

7) ***In the opposite figure:*** *The length of* $\overline{BC}$ = ... *cm*

a) 6.3 *b) 10*

c) 3.6 *d) 8*



8) If L , M are the two roots of the equation $x^2 - 5x - 2 = 0$, then the numerical value of the expression $L^2 - 5L + 3 =$ .....

a) zero b) 4 c) 5 d) 14

9) An inscribed angle of measure 30° subtended arc of length 3 cm , then the area of its circle = ... (nearest cm^2)

a) 81π b) 9π c) $\frac{9}{\pi}$ d) $\frac{81}{\pi}$

10) *The two similar polygons are congruent if the scale factor equals .....*

a) $\sin\theta \cos\theta$ b) $\csc\theta \sec\theta$

c) $\tan\theta \cot\theta$ d) $\sin\theta \sec\theta$

11) If $f : R \to R$, where $f(x) = a + bx$ and

$\sqrt{b}$ = imaginary number, then $f(x) \geq 0$, when $x \in$ ....

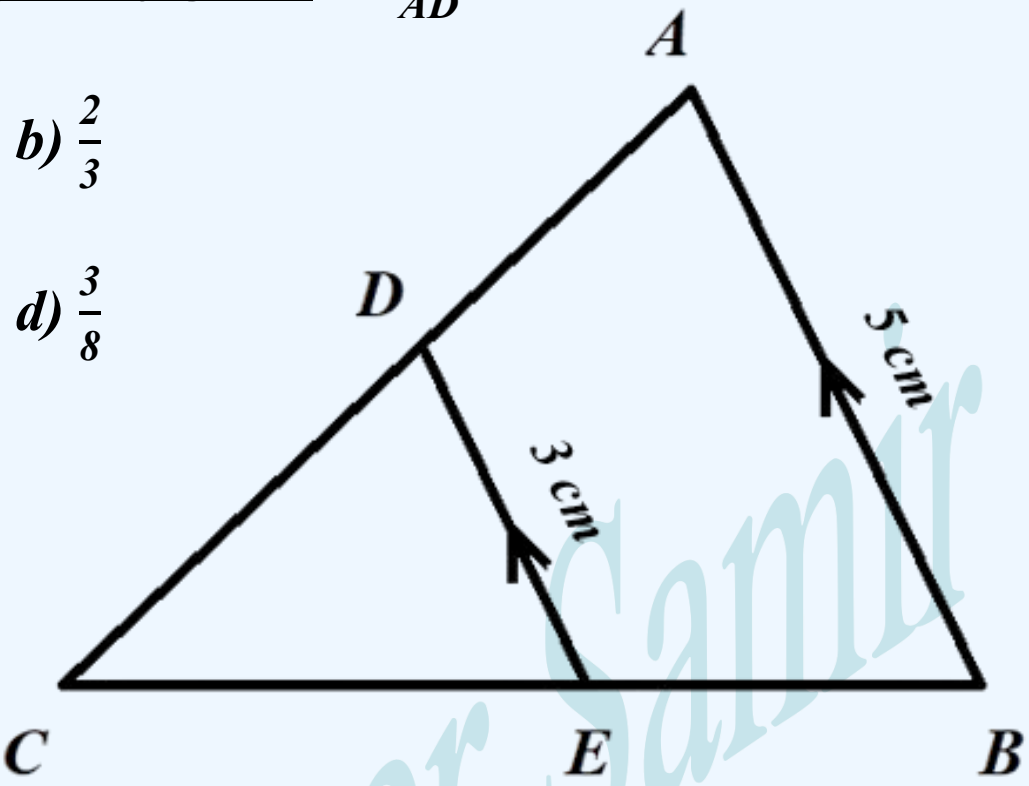
a) $[\frac{-a}{b}, \infty[$ b) $]\frac{-a}{b}, \infty[$

c) $]-\infty, \frac{-a}{b}[$ d) $]-\infty, \frac{-a}{b}]$

12) ***In the opposite figure:*** $\frac{CD}{AD}$ = ...

a) $\frac{3}{5}$ b) $\frac{2}{3}$

c) $\frac{3}{2}$ d) $\frac{3}{8}$



13) If L , M are the two roots of the equation $x^2 - 7x + 3 = 0$, then the equation whose roots $L + M$, LM is .....

a) $x^2 - 10x - 21 = 0$

b) $x^2 - 10x + 21 = 0$

c) $x^2 - 21x + 10 = 0$

d) $x^2 - 21x - 10 = 0$

14) *The degree measure of a central angle subtends an arc of length 6π in the circle with radius length 8 cm equals .....*

a) $\frac{3\pi}{4}$ b) 45° c) 135° d) 270°

15) If $\Delta XYZ \sim \Delta ABC$, $XY = 5AB$, then: $\frac{a(\Delta XYZ)}{a(\Delta ABC)} = ...$

a) $\frac{1}{5}$ b) $\frac{1}{25}$ c) 5 d) 25

16) Sin (θ - 90°) = ...

a) sin θ b) cos θ c) - sin θ d) - cos θ

17) The measure of one angle of a rhombus equals 80° then the measure of one angle of the other similar rhombus is .....

a) 50° b) 70° c) 100° d) 120°

18) If $(i-2)$ is one of the two roots of the equation $x^2 - ax + c = 0$, where $a , c \in R$, then the numerical value of $2a - c$ equals .....

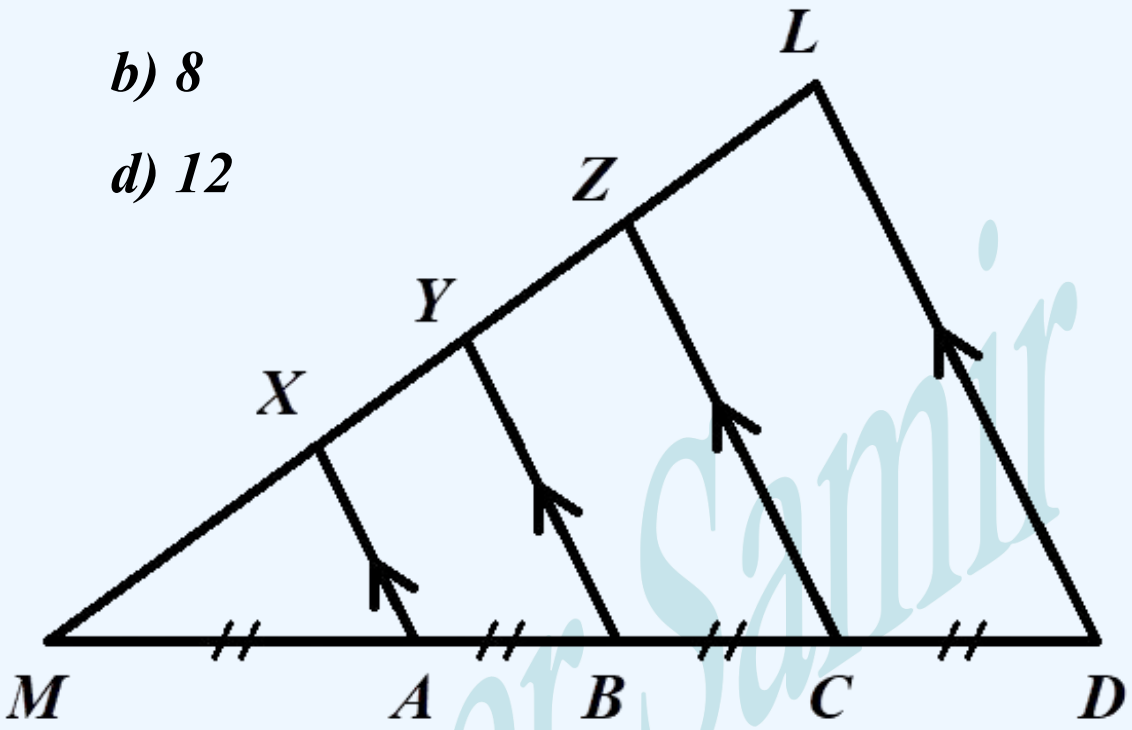
a) 3 b) -3 c) 13 d) -13

19) ***In the opposite figure:*** *If DL = 20 cm*

then AX = ...

a) 4 *b) 8*

c) 5 *d) 12*



20) If $\cos 2\theta = 0$, where $\theta \in]0 , \pi[$, then $\theta =$ .....

a) $90°$, $270°$ b) $45°$, $135°$

c) $90°$, $135°$ d) $45°$, $270°$

21) If the two roots of the equation $x^2 + 4x + 2k = 0$ are real and different, then $k \in$ .....

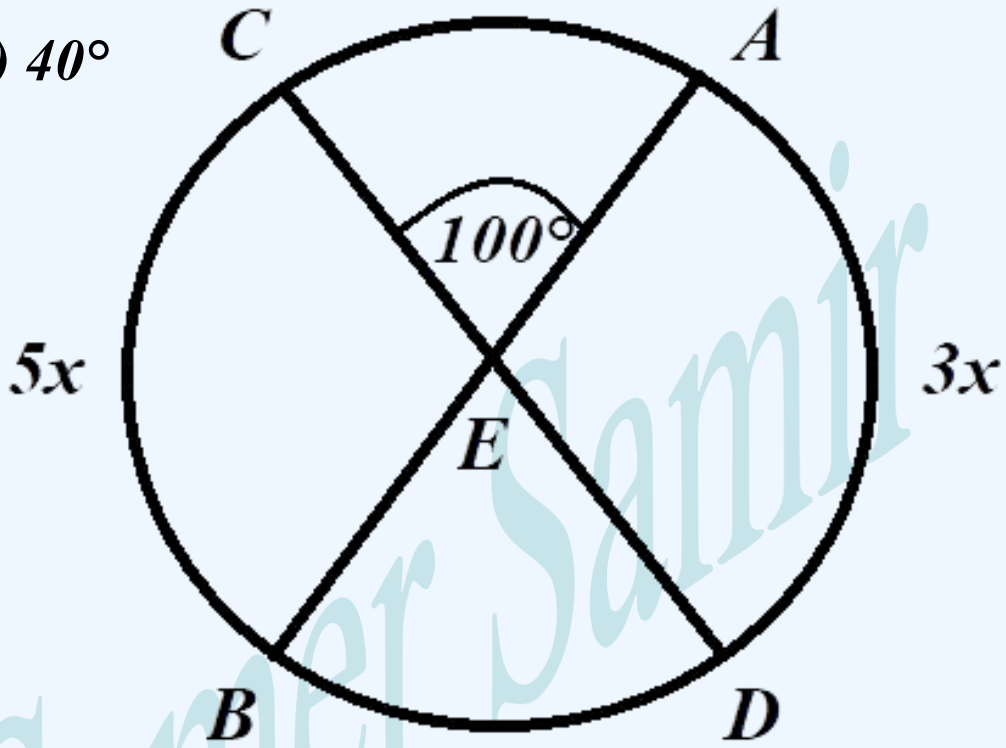
a) $[2, \infty[$ b) $]2, \infty[$

c) $]-\infty, 2]$ d) $]-\infty, 2[$

22) ***In the opposite figure:*** *The value of x = ...*

a) 10° b) 20°

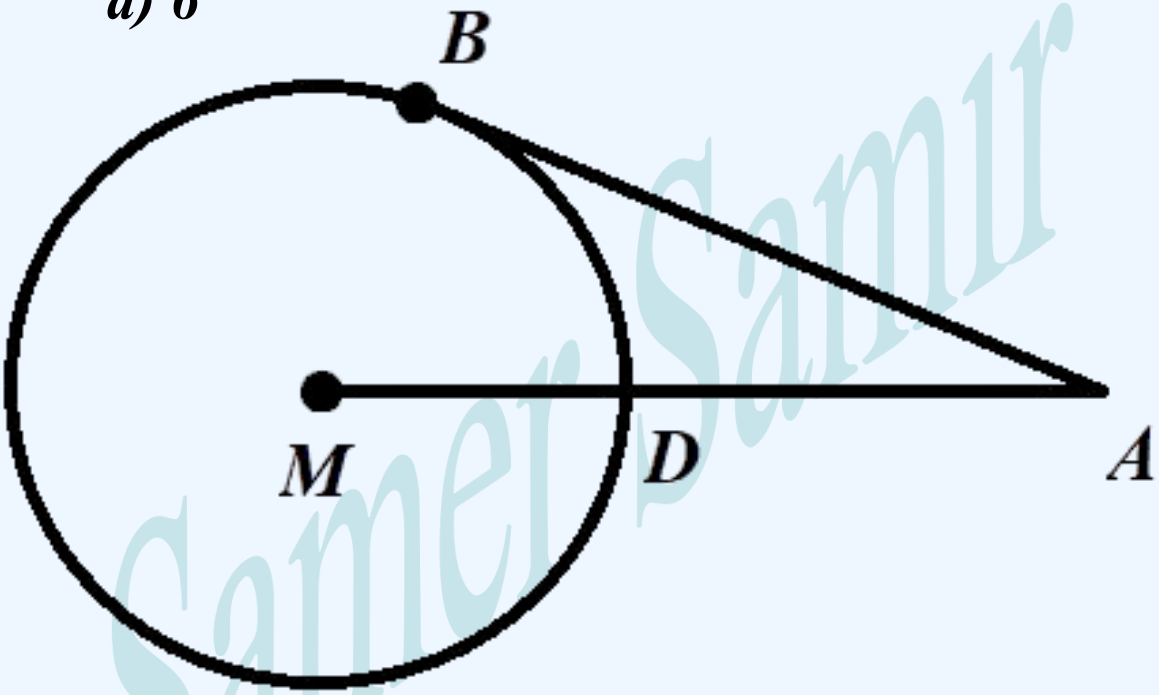
c) 30° d) 40°



23) ***In the opposite figure:*** $\overline{AB}$ ***is a tangent segment of a circle M , AB = 12 cm, AD = 9 cm , then: the diameter length of the circle = ... cm***

a) 8 ***b) 12***

c) 7 ***d) 6***



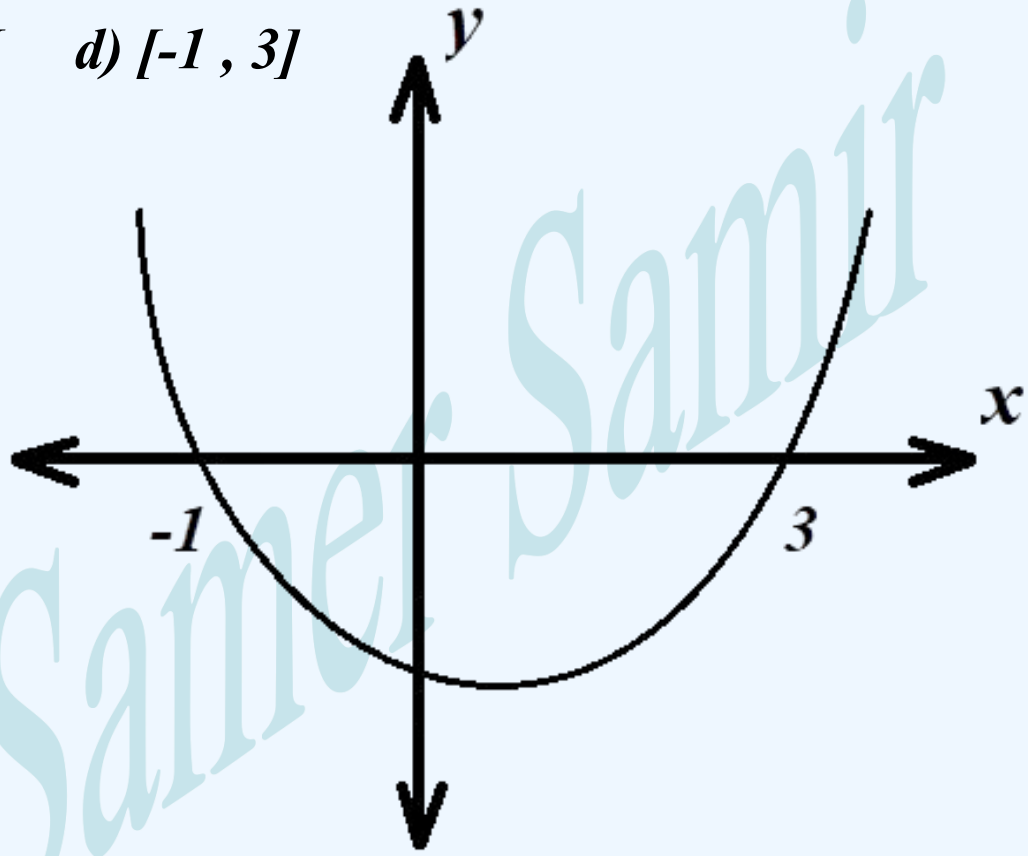
24) The number i^{-19} in the simplest form equals .....

a) -1 b) 1 c) i d) -i

25) **<u>The opposite figure:</u>** *represents the curve of the function* $f(x) = ax^2 + bx + c$ *, then the S.S of the inequality* $f(x) \geq 0$ *is .....*

a) $R - [-1 , 3]$ *b)* $]-1 , 3[$

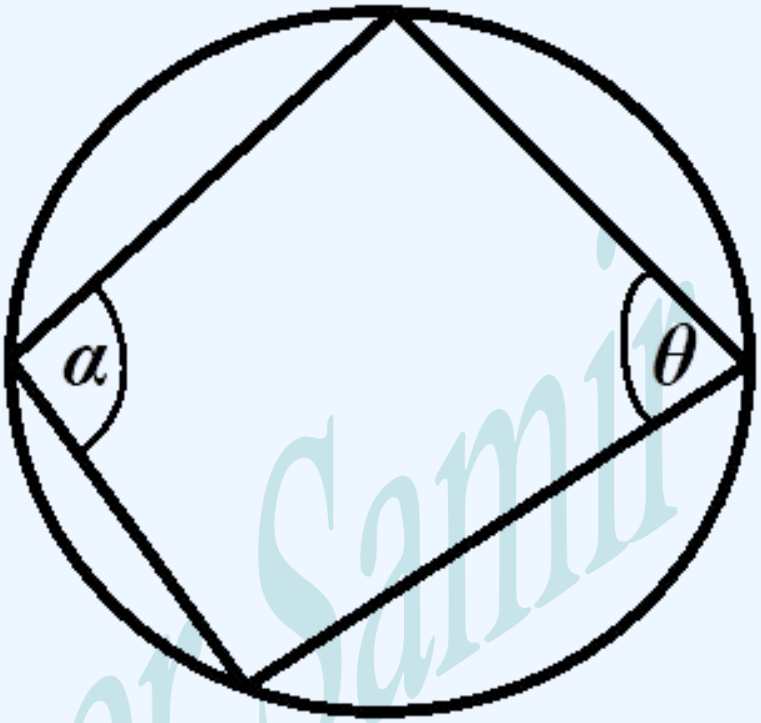
c) $R -]-1 , 3[$ *d)* $[-1 , 3]$



26) *In the opposite figure:* If $5\cos\theta = 3$, $\tan\alpha =$ .....

a) $\frac{3}{4}$ b) $-\frac{3}{4}$

c) $\frac{3}{5}$ d) $-\frac{4}{3}$



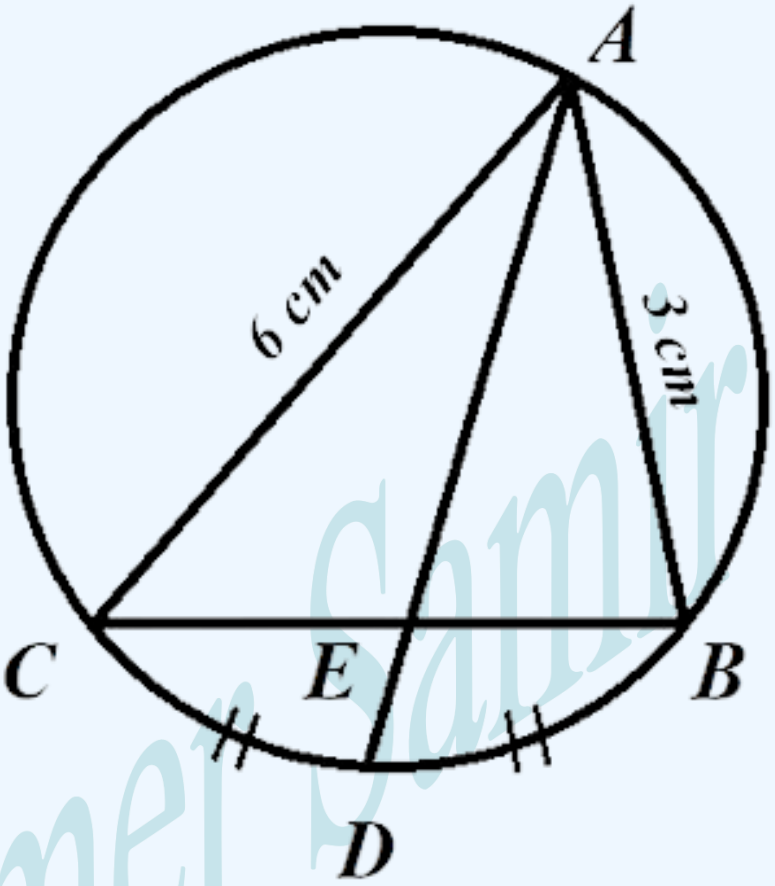
27) If $x = 2 + 3i$, $y = \frac{4 - 6i}{1 - i}$, then the number $x + y$ in the simplest form equals .....

a) $7 + 2i$ b) $7 - 2i$ c) $3 - 4i$ d) $3 + 4i$

28) ***In the opposite figure:*** $\frac{BE}{BC}$ = ...

a) $\frac{1}{3}$ b) $\frac{1}{2}$

c) 2 d) 3



29) If $\Delta ABC \sim \Delta XYZ$ and $\frac{AB+BC}{XY+YZ}=\frac{2}{5}$, then the perimeter of ΔABC : the perimeter of ΔXYZ = ...

a) $\frac{5}{2}$ b) $\frac{2}{5}$ c) $\frac{10}{13}$ d) $\frac{8}{10}$

30) If $\frac{\tan(\theta - 25)}{\cot(\theta + 35)} = \tan\frac{\pi}{4}$, then the value of θ can be equal .....

a) 30° b) 40° c) 50° d) 60°

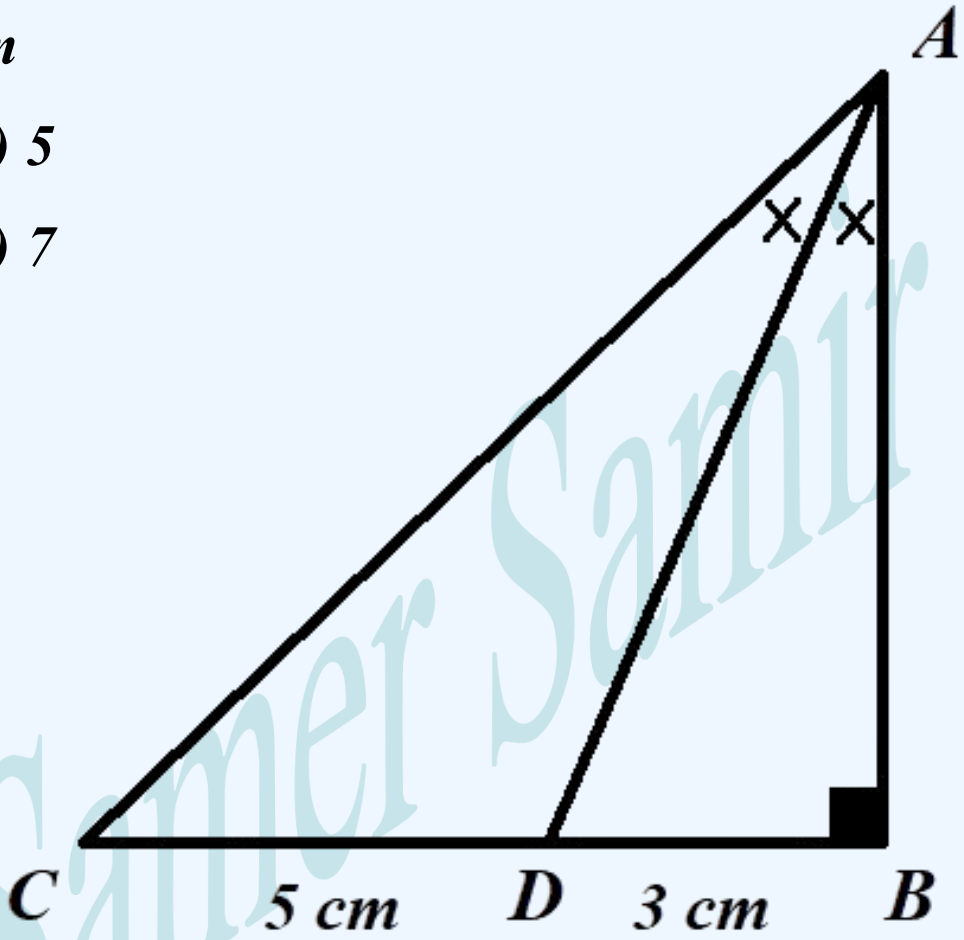
31) The angle of measure $\frac{-4\pi}{3}$ lies in the ..... quadrant.

a) first b) second c) third d) fourth

32) ***In the given figure:*** ΔABC *is right angled at* B , $\overrightarrow{AD}$ *bisects* $\angle A$, $BD = 3$ *cm* , $DC = 5$ *cm* , *then* $AB =$ ..... *cm*

a) 4 b) 5

c) 6 d) 7



33) The S.S of the inequality $x^2 - 2x < 0$ is .....

a) R - [0 , 2]

b) R -]0 , 2[

c) [0 , 2]

d)]0 , 2[

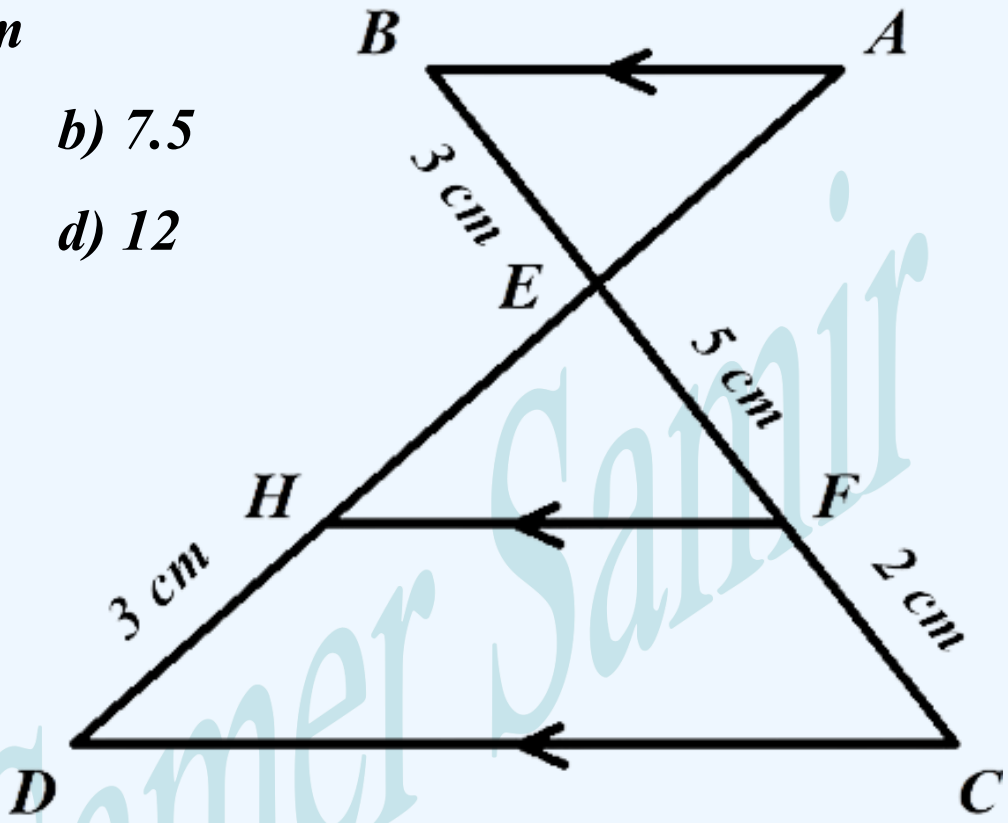
34) *In the opposite figure:* $\overline{AB} \parallel \overline{FH} \parallel \overline{CD}$, BE = 3 cm

HD = 3 cm , EF = 5 cm , FC = 2 cm , then

AH = ... cm

a) 6 b) 7.5

c) 10 d) 12



35) If the two roots of the equation: $x^2 - 2x + k = 0$ are complex , then $k = ..$

a) $]\ 1\ ,\ \infty\ [$ b) $[\ 1\ ,\ \infty\ [$

c) $]\ -\infty\ ,\ 1\ [$ d) R

36) If the terminal side of a directed angle intersects the unit circle at the point $(x , \frac{\sqrt{3}}{2})$ such that $\theta \in]90° , 180°[$, then $x =$ .....

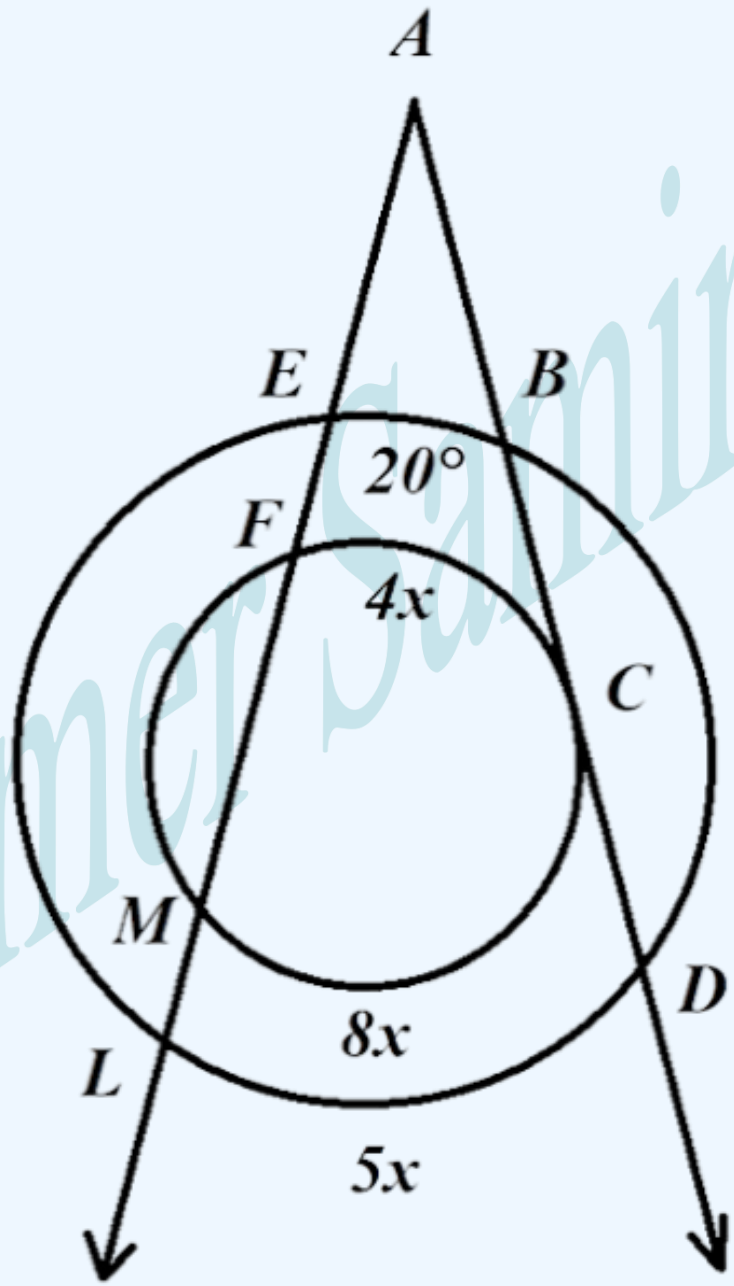
a) $\frac{1}{2}$ b) $\frac{-1}{2}$ c) $\frac{\sqrt{3}}{2}$ d) $\frac{-\sqrt{3}}{2}$

37) ***In the opposite figure:*** *Two concentric circles*

$m(\overset{\frown}{BE}) = 20°$, $m(\overset{\frown}{CF}) = 4x$, $m(\overset{\frown}{CM}) = 8x$, $m(\overset{\frown}{DL}) = 5x$, *then* $x =$ ..... °

a) 10° b) 15°

c) 20° d) 30°



38) If $\sec(3\theta - 20°) = \operatorname{cosec}(2\theta - 40°)$ such that θ is an acute positive angle, then $\cos\theta =$ .....

a) $\frac{1}{2}$ b) $\frac{\sqrt{3}}{2}$ c) 1 d) zero