Ministry of Education **إعداد وترجمة أ / محمد فاروق محمد**

Mathematics Councilor Office

Released questions for 1st secondary stage 2019/2020

(1) If $x = 5$ is a root of the equation: $x^2 + mx = 2m + 4$, then m = ……..

(a) -7 (b) 7 (c) $\frac{29}{3}$ (d) $\frac{-29}{3}$

(2) If 2 , 7 are the roots of the equation : $x^2 + ax + b = 0$,then the value of : $a + b$ = …….

(a) 5 (b) -5 (c) 23 (d) -23

(3) $(1 + i)^4 - (1 - i)^4$ = ……..

(a) 0 (b) 8 (c) -8 (d) 4

(4) If $2x - y + (x - 2y)i = 5 + i$, then (x, y) = ……

(a) (1,3) (b) (3,1) (c) (-3,1) (d) (3,-1)

(5) If the two roots of the equation: $kx^2 - 8x + 16 = 0$ are complex and not real ,then $k \in$ …….

(a) $]1 , \infty[$ (b) $]-\infty, 1[$ (c) $]- \infty, -1[$ (d) $]-1 , \infty[$

(6) The two roots of the equation: $x + \frac{9}{x} = 6$ where $x \neq 0$ are ……..

(a) real and equal (b) real and different (c) complex and not real (d) conjugate to each other

(7) If the two roots of the equation: $8x^2 - bx + 3 = 0$ are positive and the ratio between them is 2 : 3 ,then the value of b = …….

(a) 10 (b) -10 (c) $\frac{5}{4}$ (d) $\frac{-5}{4}$

(8) If L and M are the two roots of the equation: $x^2 - 7x + 3 = 0$,then the quadratic equation whose roots are $2L$, $2M$ is …….

(a) $\boldsymbol{x^2 - 14x + 12 = 0}$ (b) $\boldsymbol{x^2 + 14x + 12 = 0}$ (c) $\boldsymbol{x^2 - 14x - 12 = 0}$ (d) $\boldsymbol{x^2 + 14x - 12 = 0}$

(9) If the difference between the two roots of the equation: $6x^2 - 7x + 1 - a = 0$ is $\frac{11}{6}$,then the value of a = ……

(a) 4 (b) 2 (c) -4 (d) -2

(10) If : $[-3,2] \rightarrow R$, $f(x) = 3x + 6$, then the sign of the function f is negative in the interval ……..

(a) $]-2, \infty[$ (b) $[-3, -2[$ (c) $]-\infty, -2[$ (d) $[-2,2]$

(11) If the function f: $f(x) = a\,x^2 + bx + c$, $a < 0$ and the two roots of $f(x) = 0$ are 2 , -5 ,then the function f is positive in …….

(a) $\{-5,2\}$ (b) $R -]-5,2[$ (c) $]-5,2[$ (d) $[-5,2]$

(12) The solution set of the inequality: $(x-3)(x-4) < 0$ in R is …….

(a) $\{3,4\}$ (b) $]3,4[$ (c) $[3,4]$ (d) R-$[3,4]$

(13) The angle of measure 2019° lies in the ……. quadrant

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

(14) If the length of an arc in a circle equals $\frac{3}{8}$ of its circumference, then the measure of the central angle subtending to this arc in degrees equals ……

(a) 30° (b) 67°30\ (c) 135° (d) 240°

(15) If $x\,sin\frac{\pi}{4}\,cos\frac{\pi}{4}\,cot\frac{\pi}{6} = tan^2\frac{\pi}{4} - cos^2\frac{\pi}{3}$, then $x =$ ……

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

(16) If $\theta \in \left]\frac{\pi}{2}, \pi\right[$, $sin\,\theta = \frac{12}{13}$, then the value of : $csc\,\theta \sin\theta - tan\,\theta\,cot\,\theta + cos^2\theta =$ …

(a) $\frac{25}{169}$ (b) $\frac{144}{169}$ (c) $\frac{25}{144}$ (d) $\frac{169}{25}$

(17) If $cos(270^\circ - \theta) = \frac{-1}{2}$ where θ is the measure of the smallest positive angle, then: $\theta =$ ……..°

(a) 30 (b) 150 (c) 210 (d) 330

(18) If $cos\left(\frac{\theta+20^\circ}{2}\right) = sin\left(\frac{\theta+40^\circ}{2}\right)$ where $0^\circ < \theta < 90^\circ$, then: $\theta =$ ……..°

(a) 30 (b) 60 (c) 45 (d) 15

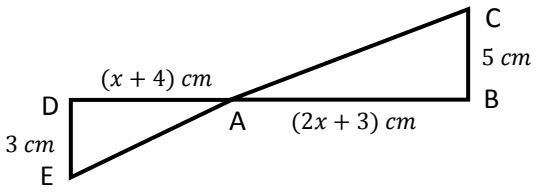
(19) If $f(x) = cos\,6\theta$, then the range of the function is …….

(a) [-6,6] (b) [-1,1] (c) [1,6] (d)]-1,1 [

(20) If $cos^2\theta = \frac{9}{25}$ where $90^\circ < \theta < 180^\circ$, then the value of :
$25sin\,\theta - 4cot\,\theta =$ ……..

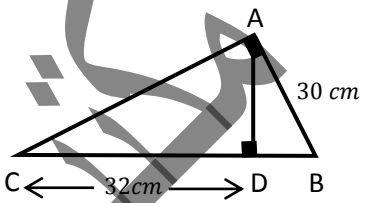
(a) 23 (b) 17 (c) -17 (d) -23

(21) In the opposite figure:
$\Delta\, ABC \sim \Delta\, ADE$, then the value of x = ……



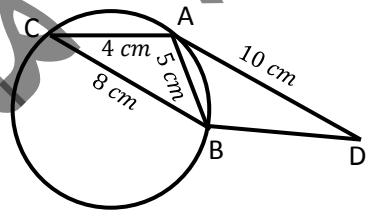
(a) 11 (b) 1 (c) 12 (d) 10

(22) In the opposite figure:
ABC is a right –angled triangle at $A, \overline{AD} \perp \overline{BC}$,then
$AD =$ ….. cm



(a) 18 (b) 25 (c) 24 (d) 20

(23) In the opposite figure:
$\overline{AD}$ is a tangent to the circle at A ,
then the length of $\overline{BD}$ = ….. cm

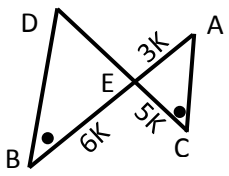


(a) $6\frac{1}{4}$ (b) $8\frac{1}{4}$ (c) 6 (d) 7

(24) If the ratio between the lengths of the diagonals of two squares is 2 : 5 and the area of the smaller one is $4\ cm^2$, then the area of the greater one is …… cm^2

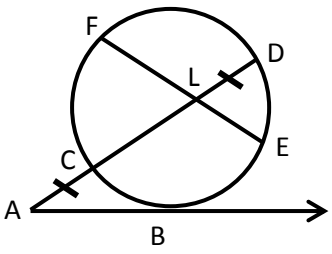
(a) 25 (b) 10 (c) 20 (d) 50

(25) In the opposite figure:
$\overline{AB} \cap \overline{CD} = \{E\}$, $a(\Delta\, ACE) = 900\ cm^2$,
then $a(\Delta\, DEB) =$ ……. cm^2



(a) 1296 (b) 1080 (c) 750 (d) 625

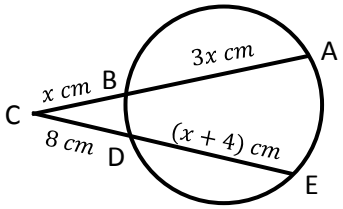
(26) In the opposite figure:
$\overrightarrow{AB}$ is a tangent to the circle at B ,
$FL = 10\ cm$, $LE = 3.2\ cm$,
$CL = 8cm$ and $AB = x\ cm$,
then x = ….. cm



(a) 8 (b) 4 (c) 6 (d) 10

(27) In the opposite figure:

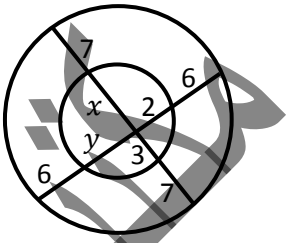
$x = \ldots\ldots\ldots\ cm$



(a) 6 (b) 5 (c) 4 (d) 3

(28) In the opposite figure:

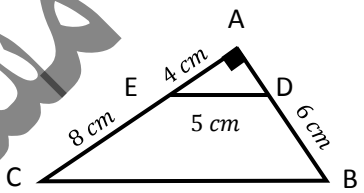
$(x, y) = \ldots\ldots\ldots$



(a) $(11\ ,16.5)$ (b) $(11\ ,15.5)$ (c) $(12\ ,16.5)$ (d) $(12\ ,15.5)$

(29) In the opposite figure:

$BC = \ldots\ldots\ldots\ cm$

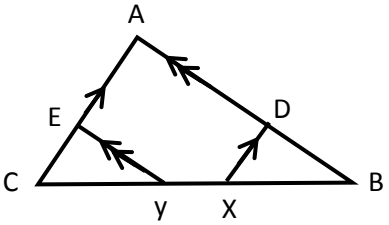


(a) 15 (b) 10 (c) 12,5 (d) 25

(30) In the opposite figure:

$\overline{AX}//\overline{AC}$, $\overline{EY}//\overline{AB}$, $BC = 13.5\ cm$, $\frac{AD}{DB} = \frac{3}{2}$

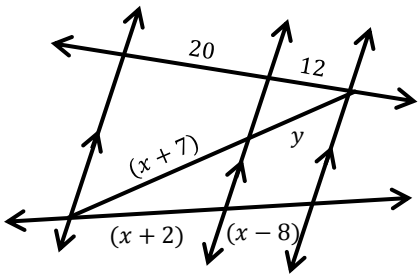
and $\frac{EC}{AE} = \frac{4}{5}$, then XY = ... cm



(a) 2.1 (b) 2.3 (c) 2.4 (d) 2.6

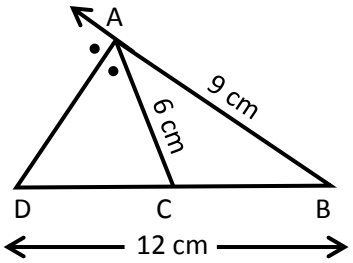
(31) In the opposite figure:

$x - y = \ldots\ldots\ldots\ cm$



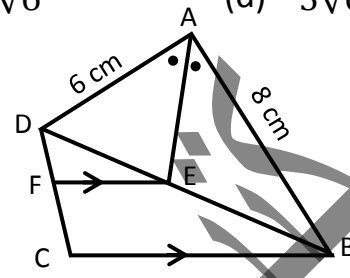
(a) 5 (b) 6 (c) 4 (d) 7

(32) In the opposite figure:
$AD = \ldots\ldots\ldots\ cm$



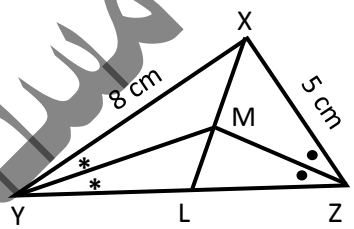
(a) $\sqrt{42}$ (b) 8 (c) $5\sqrt{6}$ (d) $3\sqrt{6}$

(33) In the opposite figure:
$\frac{DF}{FC} = \ldots\ldots\ldots$



(a) $\frac{4}{3}$ (b) $\frac{8}{7}$ (c) $\frac{2}{3}$ (d) $\frac{3}{4}$

(34) In the opposite figure:
$8LZ = \ldots\ldots\ldots\ LY$

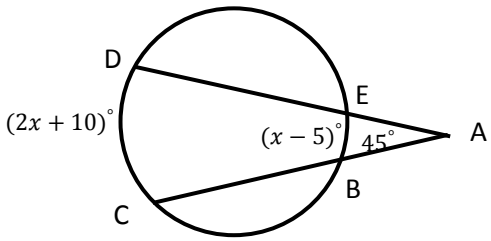


(a) 5 (b) 3 (c) 13 (d) 2

(35) If M is a circle of radius length $3\ cm$, A is a point lies in its plane where $MA = 4\ cm$, then $P_M(A) = \ldots\ldots\ldots$

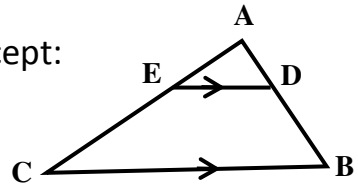
(a) 7 (b) -7 (c) 25 (d) -25

(36) In the opposite figure:
$x = \ldots\ldots\ldots^\circ$



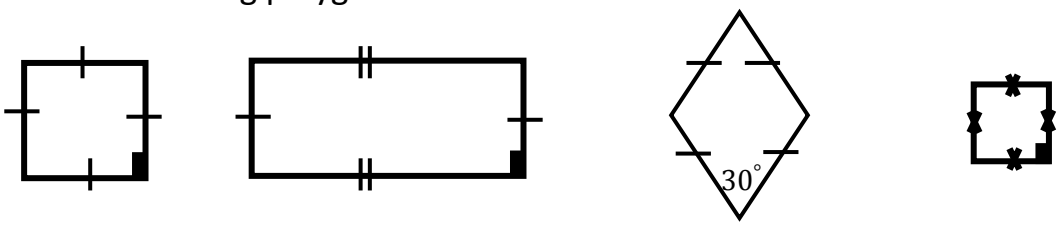
(a) 75 (b) 150 (c) 135 (d) 100

(37) In the opposite figure:
All of the following geometrical relations are correct except:



(a) $\frac{AD}{DB} = \frac{AE}{EC}$ (b) $\frac{AD}{DB} = \frac{DE}{BC}$ (c) $\frac{AD}{AB} = \frac{AE}{AC}$ (d) $\frac{BD}{BA} = \frac{CE}{CA}$

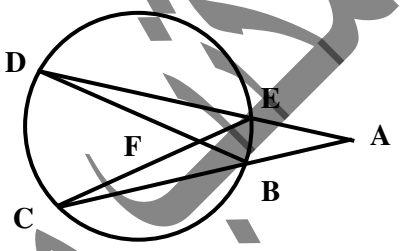
(38) Which of the following polygons are similar?



(1) **(2)** **(3)** **(4)**

(a) Polygons (1),(2) (b) Polygons (1),(3) (c) Polygons (1),(4) (d) Polygons (3),(4)

(39) In the opposite figure:
$m(\angle \mathrm{DFC})$ - $m(\angle \mathrm{A})$ =.....



(a) $m\,(\widehat{DC})$ (b) $2m\,(\widehat{DC})$ (c) $m\,(\widehat{EB})$ (d) $2m\,(\widehat{EB})$

(40) If P_M(A)= 7 , then the point A lies .....the circle M

(a) inside (b) outside (c) on (d) on the center of

المحافظـــــــة		الصف	الثانوي
الادارة التعليمية		المادة	
اسم المدرســـة		رقم الجلوس	
اسم الطالـــــب		الرقم السري	
توقيع الملاحظين			

1.	A	B	C	D	26.	A	B	C	D
2.	A	B	C	D	27.	A	B	C	D
3.	A	B	C	D	28.	A	B	C	D
4.	A	B	C	D	29.	A	B	C	D
5.	A	B	C	D	30.	A	B	C	D
6.	A	B	C	D	31.	A	B	C	D
7.	A	B	C	D	32.	A	B	C	D
8.	A	B	C	D	33.	A	B	C	D
9.	A	B	C	D	34.	A	B	C	D
10.	A	B	C	D	35.	A	B	C	D
11.	A	B	C	D	36.	A	B	C	D
12.	A	B	C	D	37.	A	B	C	D
13.	A	B	C	D	38.	A	B	C	D
14.	A	B	C	D	39.	A	B	C	D
15.	A	B	C	D	40.	A	B	C	D
16.	A	B	C	D	41.	A	B	C	D
17.	A	B	C	D	42.	A	B	C	D
18.	A	B	C	D	43.	A	B	C	D
19.	A	B	C	D	44.	A	B	C	D
20.	A	B	C	D	45.	A	B	C	D
21.	A	B	C	D	46.	A	B	C	D
22.	A	B	C	D	47.	A	B	C	D
23.	A	B	C	D	48.	A	B	C	D
24.	A	B	C	D	49.	A	B	C	D
25.	A	B	C	D	50.	A	B	C	D

الدرجة الكلية

الرقم السرى