King Abdulaziz University

Rabigh College of Science and Arts

Department of Mathematics

First Exam - Math 110

Date: 27 /6/1439

Time: 90 minutes

Name…………………………………………… ID:………......................... **A**

Choose the correct answer of the following questions:

(1)	The solution set of the inequality $2x+1<5x-8$ is			
	(a) $(-3,\infty)$	(b) $(3,\infty)$	(c) $[3,\infty)$	(d) $(-\infty,3)$

(2)	The solution set of the inequality $-9\le 2x-5<7$ is			
	(a) $(-2,6)$	(b) $[-2,6]$	(c) $[-2,6)$	(d) $(-2,6]$

(3)	(3) $\lvert 2-e\rvert =$			
	(a) $2-e$	(b) $e-2$	(c) $-2-e$	(d) $2+e$

(4)	The solution set of the inequality $\lvert x\rvert \ge 3$ is			
	(a) $(-3,3)$	(b) $[-3,3]$	(c) $(-\infty,-3]\cup[3,\infty)$	(d) $(-\infty,-3)\cup(3,\infty)$

(5)	The distance between the points $P_1(6,-2)$ and $P_2(-1,3)$ is			
	(a) -3	(b) $\sqrt{10}$	(c) $\sqrt{74}$	(d) 1

(6)	The equation of the line passes through the point $(2,-3)$ with slope 6 is			
	(a) $y=5x-15$	(b) $y=6x-15$	(c) $y=6x+15$	(d) $y=5x-3$

(7)	The equation of the line passing through $(1,-6)$ and parallel to the line $x+2y=6$ is			
	(a) $x+2y=-11$	(b) $2x+3y=2$	(c) $x+y=-11$	(d) $x-2y=11$

(8)	The equation of the line passes through $(2,1)$ and $(1,6)$ is			
	(a) $5x-y=11$	(b) $x+5y=11$	(c) $-x+y=5$	(d) $5x+y=11$

(9)	The slope m and the y – intercept b of the line $4x-2y=10$ are			
	(a) $m=2,\ b=-5$	(b) $m=5,\ b=2$	(c) $m=-2,\ b=5$	(d) $m=1,\ b=4$

(10)	The equation for the line passes through $(-1,-2)$ and perpendicular to the line $2x+5y+8=0$ is			
	(a) $5x-y=-1$	(b) $2x-5y=1$	(c) $5x-2y=-1$	(d) $x+y=3$

(11)	$\frac{5\pi}{6}=$			
	(a) 120°	(b) 250°	(c) 300°	(d) 150°

(12)	If a circle has radius 10 cm, the length of the arc subtended by a central angle of $\frac{5\pi}{6}$ rad is			
	(a) $\frac{25\pi}{3}$	(b) $\frac{25\pi}{6}$	(c) $\frac{50\pi}{3}$	(d) $\frac{\pi}{3}$

(13)	$\sin\theta\cot\theta=$			
	(a) $\sin\theta$	(b) $\tan\theta$	(c) $\sec\theta$	(d) $\cos\theta$

(14)	If $\tan\theta=\frac{3}{4}$, $0\le\theta\le\frac{\pi}{2}$ then $\sec\theta=$			
	(a) $\frac{5}{4}$	(b) $-\frac{4}{5}$	(c) $-\frac{5}{4}$	(d) $\frac{4}{5}$

(15)	$\tan^2\theta+1=$			
	(a) $\sec^2\theta$	(b) $\csc^2\theta$	(c) $\sec\theta$	(d) $\sin^2\theta$

(16)	The domain of the function $f(t)=\sqrt{t}+\sqrt[3]{t}$ is			
	(a) $(0,\infty)$	(b) $[0,\infty)$	(c) $[2,3]$	(d) $(-\infty,\infty)$

(17)	The function $g(x)=\sqrt[5]{x}$ is classified as			
	(a) Polynomial	(b) Exponential	(c) Power	(d) Rational

(18)	The function $f(x)=\frac{x}{x^2+1}$ is			
	(a) Even	(b) Odd	(c) Neither even nor odd	(d) Even and odd

(19)	If $y=f(x)$, the graph of $y=f(5x)$ obtained by	
	(a) Shift 5 units upward	(b) Compress horizontally by a factor of 5
	(c) Reflect about the x-axis	(d) Stretch horizontally by a factor 5

(20)	If $f(x)=x$ and $g(x)=3x^2+x$, then $\left(\frac{f}{g}\right)(x)=$			
	(a) $3x+1$	(b) $\frac{x}{3x^2+1}$	(c) $\frac{1}{3x+1}$	(d) $3x-1$

(21)	If $f(x)=\frac{x}{1+x}$ and $g(x)=\sin 2x$, then $(g\circ f)(x)=$			
	(a) $\sin\left(\frac{2x}{1+x}\right)$	(b) $\frac{\sin 2x}{1+\sin 2x}$	(c) $\sin\left(\frac{2x}{2+2x}\right)$	(d) $\frac{\sin x}{1+\sin x}$

(22)	The graph of $y=\sin x$ is shifted up 8 units and to the right 3 units, the equation for the new graph is	
	(a) $y=\sin(x-8)+3$	(b) $y=\sin(x-3)-8$
	(c) $y=\sin(x+3)+8$	(d) $y=\sin(x-3)+8$

(23)	If the graph of the function $y=x^2$ is reflected about the x −axis, the equation for the new graph is			
	(a) $y=x^2+1$	(b) $y=-x^2$	(c) $y=x^2$	(d) $y=-x^2-1$

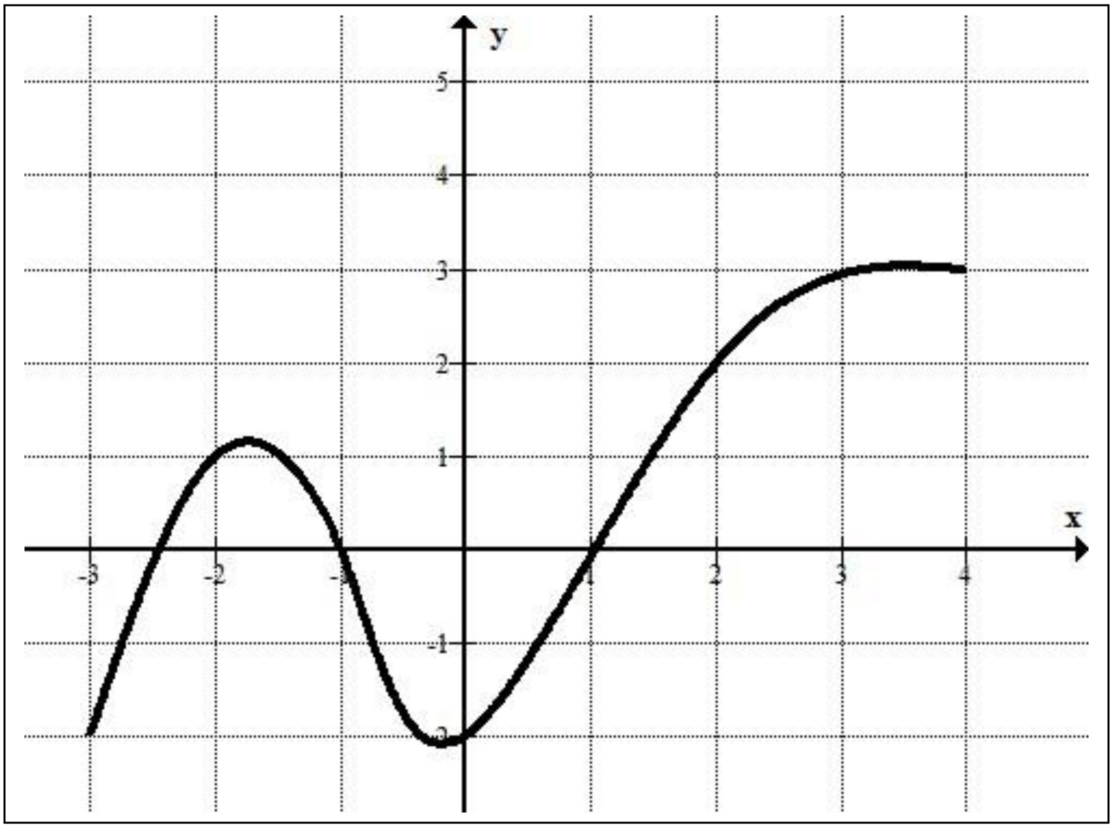
(24)	$\tan^{-1}\left(\frac{1}{\sqrt{3}}\right)=$			
	(a) $\frac{\pi}{3}$	(b) $\frac{\pi}{4}$	(c) $\frac{\pi}{6}$	(d) $\frac{\pi}{2}$

(25)	The domain of the function $y=\cos^{-1}x$ is			
	(a) $(-1,1)$	(b) $(-\infty,\infty)$	(c) $(1,\infty)$	(d) $[-1,1]$

(26)	The inverse of the function of $f(x)=\frac{x^3+2}{4}$ is			
	(a) $f^{-1}(x)=\sqrt[3]{4x-2}$	(b) $f^{-1}(x)=4x-2$	(c) $f^{-1}(x)=\sqrt{4x-2}$	(d) $f^{-1}(x)=x^3+2$

(27)	The solution for the equation $\ln(10-x)=5$ is			
	(a) $10+e^5$	(b) e^5-10	(c) $5-e^{10}$	(d) $10-e^5$

Use the figure below to solve 28, 29 and 30



(28)	The domain of the function is			
	(a) $[-3,4]$	(b) $(-1,\infty)$	(c) $(0\,,5\,]$	(d) $[-2,3]$

(29)	The range of the function is			
	(a) $[-3,4]$	(b) $(-1,\infty)$	(c) $(0\,,5\,]$	(d) $[-2,3]$

(30)	$f\,(-3) =$			
	(a) -1	(b) 0	(c) -2	(d) 3