King Abdulaziz University

Rabigh College of Science and Arts

Department of Mathematics

First Exam - Math 110

Date: 20/6/1440

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

(2)	The solution set of the inequality $x^2-3x+2<0$ is			
	(a) $(2,\infty)$	(b) $(-\infty,1)$	(c) $(1,2)$	(d) $[1,2]$

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

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

(5)	The solution set of the inequality $\lvert 4x-2\rvert <6$ is			
	(a) $(-\infty,-1)$	(b) $(-1,2)$	(c) $(2,\infty)$	(d) $[-1,2]$

(6)	The distance between the points $(1,-2)$ and $(-2,1)$ is			
	(a) 0	(b) $\sqrt{6}$	(c) 3	(d) $\sqrt{18}$

(7)	The equation of the line passes through the point $(-1,4)$ with slope -3 is			
	(a) $3x+y=1$	(b) $3x-y=1$	(c) $3x+y=7$	(d) $x+3y=-1$

(8)	The equation of the line passing through $(0,6)$ and parallel to the line $2x+3y=6$ is			
	(a) $2x-3y=2$	(b) $2x+3y=6$	(c) $2x+3y=18$	(d) $x+y=6$

(9)	The equation of the line passing through $(1,4)$ and perpendicular to the line $2x-3y=6$ is			
	(a) $2x+3y=11$	(b) $3x+2y=11$	(c) $3x-2y=7$	(d) $3x+y=7$

(10)	The equation of the line passes through $(-1,-2)$ and $(4,3)$ is			
	(a) $x+y=1$	(b) $x+2y=-5$	(c) $x+2y=5$	(d) $x-y=1$

(11)	The slope m and y –intercept b of the line $6x-2y=4$ are			
	(a) $m=-3, b=2$	(b) $m=2, b=3$	(c) $m=3, b=-2$	(d) $m=2, b=4$

(12)	The lines $3x-5y+19=0$ and $10x+6y-50=0$ are perpendicular	
	(a)True	(b)False

(13)	$\frac{5\pi}{12}\text{rad}=$			
	(a) 15°	(b) 75°	(c) 5°	(d) 30°

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

(15)	The radius of a circular sector with angle $\frac{3\pi}{4}$ rad and arc length 6 cm is			
	(a) 8π rad	(b) $\frac{8}{\pi}$ rad	(c) $\frac{8}{\pi}$ cm	(d) 8π cm

(16)	The domain of the function $f(x)=\dfrac{x+2}{x^2+x-6}$ is			
	(a) $\mathbb{R}$	(b) $\mathbb{R}-\{2,-3\}$	(c) $\mathbb{R}-\{6\}$	(d) $\mathbb{R}-\{1\}$

(17)	The function $f(x)=x^{\frac{2}{3}}+x^2$ is classified as			
	(a) Polynomial	(b) Exponential	(c) Power	(d) Algebraic

(18)	The range of the function $y=\ln x$ is			
	(a) $[0,\infty)$	(b) $(-\infty,\infty)$	(c) $(1,\infty)$	(d) $(0,\infty)$

(19)	If $h(x)=x-3$, $f(x)=\sqrt{x-3}$, $g(x)=x^2$, then			
	(a) $h(x)=f\circ g$	(b) $h(x)=g\circ f$	(c) $h(x)=f\ g$	(d) $h(x)=f\circ f$

(20)	If $f(x)=\sin x$, then the graph of $f(x)=\sin\left(\frac{x}{4}\right)$ obtained by	
	(a) Shrink vertically by a factor 4	(b) Stretch vertically by a factor 4
	(c) Shrink horizontally by a factor 4	(d) Stretch horizontally by a factor 4

(21)	If the graph of the function $f(x)=e^x$ is reflected about the y −axis, then the equation for the new graph is			
	(a) $f(x)=e^{-x}$	(b) $f(x)=-e^x$	(c) $f(x)=-e^{-x}$	(d) $f(x)=e^x$

(22)	The solution of the equation $e^{x-3}=2$ is			
	(a) $x=2+\ln 3$	(b) $x=2-\ln 3$	(c) $x=3+\ln 2$	(d) $x=3-\ln 2$

(23)	The solution of the equation $\ln(5-2x)=-3$ is			
	(a) $x=2$	(b) $x=\frac{5-e^{-3}}{2}$	(c) $x=5-e^{-3}$	(d) $x=\frac{5+e^{3}}{2}$

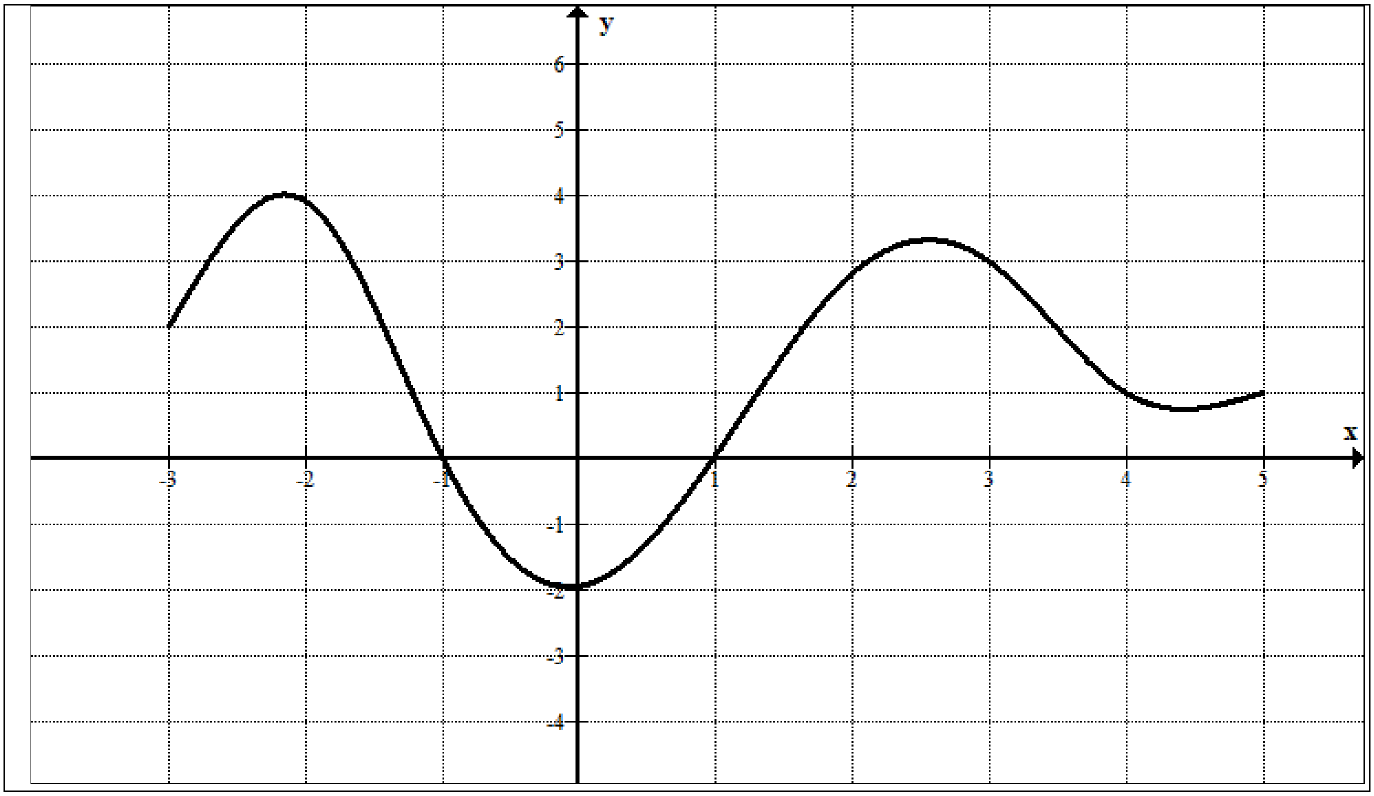
(24)	$\ln e=$			
	(a) 1	(b) 2	(c) 0	(d) 9

(25)	$\log_3 27+\log_5 125-\log_2 32=$			
	(a) 4	(b) 3	(c) 2	(d) 1

(26)	The inverse of the function of $f(x)=\frac{3-x}{2}$ is			
	(a) $f^{-1}(x)=2-3x$	(b) $f^{-1}(x)=3-x$	(c) $f^{-1}(x)=3-2x$	(d) $f^{-1}(x)=2x-6$

(27)	The function $f(x)=1+3x^3-x^5$ is			
	(a)Even	(b)Odd	(c) Neither even nor odd	(d)Even and odd

Use the figure below to solve 28, 29 and 30:



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

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

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