King Abdulaziz University	First Exam - Math 110
Rabigh College of Science and Arts	Date: 20/2/1439
Department of Mathematics	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 $\|4x-2\|<6$ is			
	(a) $(-1,2)$	(b) $[-1,2)$	(c) $[-1,2]$	(d) $(-1,2]$

(3)	$\|\pi-2\|=$			
	(a) $2-\pi$	(b) $-2-\pi$	(c) $\pi-2$	(d) $2+\pi$

(4)	The solution set of the inequality $\|x+1\|\geq 3$ is			
	(a) $(-4,2)$	(b) $[-4,2]$	(c) $(-\infty,-4)\cup(2,\infty)$	(d) $(-\infty,-4]\cup[2,\infty)$

(5)	The equation of the line passes through the point $(2,6)$ with slope $-\frac{2}{3}$ is			
	(a) $x+3y=6$	(b) $3x-2y=14$	(c) $2x+3y=22$	(d) $x-3y=9$

(6)	The equation of the line passing through $(-1,3)$ and parallel to the line $2x+3y=5$ is			
	(a) $2x+3y=7$	(b) $x+2y=11$	(c) $x-3y=-11$	(d) $2y-3x=9$

(7)	The equation of the line passing through $(-1,3)$ and perpendicular to the line $2x+3y=5$ is			
	(a) $2x+3y=7$	(b) $x+2y=11$	(c) $x-3y=-11$	(d) $2y-3x=9$

(8)	The equation of the line passes through $(-1,2)$ and $(3,-4)$ is			
	(a) $3x+2y=1$	(b) $3x-2y=14$	(c) $x+3y=6$	(d) $3x+2y=-7$

(9)	The slope m and y −intercept b of the line $y-2x-3=0$ are		
(a) $m=-2, b=-3$	(b) $m=5, b=2$	(c) $m=2, b=3$	(d) $m=1, b=2$

(10)	The distance between the points $(2,-3)$ and $(-4,-3)$ is		
(a) 5	(b) 6	(c) 7	(d) 8

(11)	$300° =$		
(a) π rad	(b) $\frac{5\pi}{3}$ rad	(c) $\frac{3\pi}{5}$ rad	(d) $\frac{7\pi}{6}$ rad

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

(13)	The domain of the function $f(x)=\frac{x}{x^2+1}$ is		
(a) $\mathbb{R}$	(b) $\mathbb{R}-\{1\}$	(c) $\mathbb{R}-\{-1,1\}$	(d) $\mathbb{R}-\{0,1\}$

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

(15)	The function $f(x)=1+3x^2-x^4$ is		
(a) Even	(b) Odd	(c) Neither even nor odd	(d) Even and odd

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

(17)	The graph of $y=\cos x$ is shifted up 6 units and to the right 2 units, the equation for the new graph is		
(a) $y=\cos(x-2)+6$	(b) $y=\cos(x+2)+6$	(c) $y=\cos(x-2)-6$	(d) $y=\cos(x+2)-6$

(18)	If $f(x)=x-1$ and $g(x)=x^3-4x$, then the domain of $\left(\frac{g}{f}\right)(x)=$

(a) $\mathbb{R}$	(b) $\mathbb{R}-\{1\}$	(c) $\mathbb{R}-\{-2,2\}$	(d) $\mathbb{R}-\{-1\}$

(19)	If $f(x)=\sqrt{x-3}$ and $g(x)=x^2$, then $(f\circ g)(x)=$

(a) $\sqrt{x^2-3}$	(b) $x(x-2)$	(c) x^2	(d) $\sqrt{x-3}$

(20)	If the graph of $y=e^x$ is compressed vertically by a factor of 5 units, the equation for the new graph is

(a) $y=e^x+5$	(b) $y=5e^x$	(c) $y=e^{x-5}$	(d) $y=\frac{1}{5}e^x$

(21)	$\log_2 5=$

(a) $\frac{\ln 2}{\ln 5}$	(b) $\ln 5-\ln 2$	(c) $\frac{\ln 5}{\ln 2}$	(d) 1

(22)	The solution of the equation $e^{2x+3}-7=0$ is

(a) $x=\frac{\ln 7+3}{2}$	(b) $x=\frac{\ln 7-3}{2}$	(c) $x=\ln 7-3$	(d) $x=\frac{\ln 7-2}{3}$

(23)	The solution of the equation $\ln(6-3x)=1$ is

(a) $x=2$	(b) $x=3-\frac{1}{2}e$	(c) $x=2+\frac{1}{3}e$	(d) $x=2-\frac{1}{3}e$

(24)	$e^{2\ln 3}=$

(a) 9	(b) 2	(c) 4	(d) 8

(25)	$\log_2 6-\log_2 15+\log_2 20=$

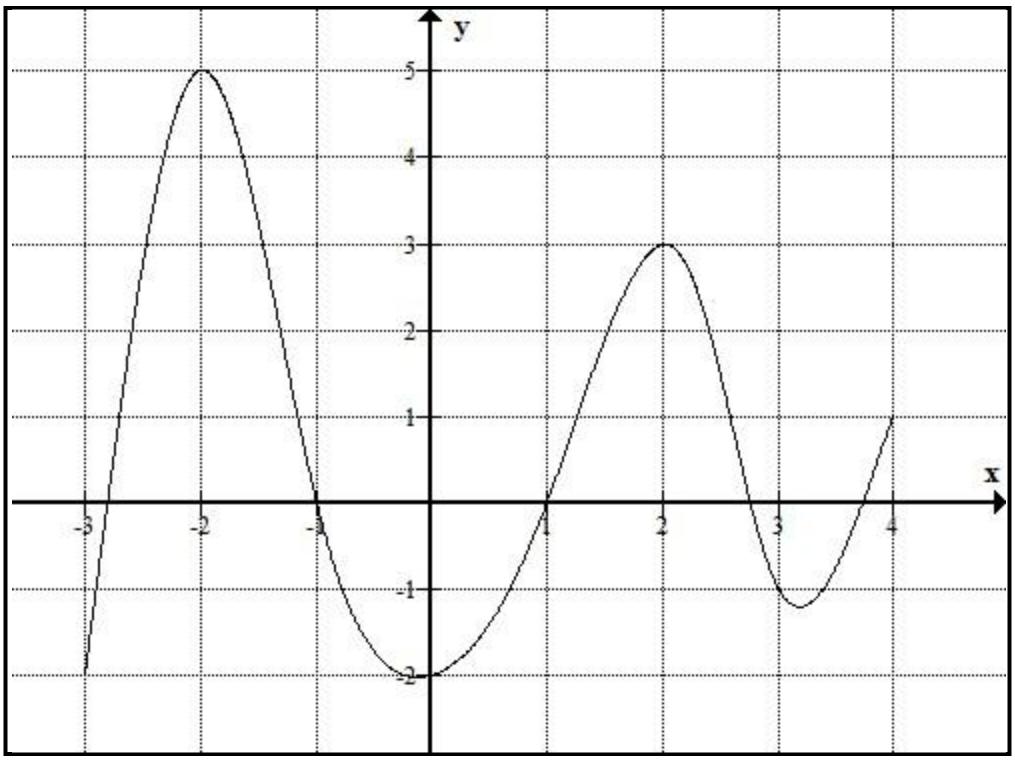
(a) 1	(b) 4	(c) 2	(d) 3

(26)	The inverse of the function of $f(x) = \sqrt[3]{\frac{x+5}{2}}$ is

(a) $f^{-1}(x) = 5x^3 - 2$	(b) $f^{-1}(x) = 2x^2 - 5$	(c) $f^{-1}(x) = 2x^3 - 5$	(d) $f^{-1}(x) = \frac{x+5}{2}$

(27)	The function $h(x) = x^5$ is one – to –one	
	(a)True	(b)False

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



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

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

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