University of Jeddah
Faculty of Science
Department of Mathematics

Academic Term: First 1438/1439 H
Exam: First Exam
Exam Time: 90 Minutes

Course Code: MATH 110

Student Name: [redacted]	**B**
ID: [redacted]	

(1) If the graph of the function $f(x) = \sqrt{x}$ is shifting to the left 3 units and then it is shifting downward 2 units, thus the new graph can be represented by

A) $\sqrt{x+3}-2$	C) $\sqrt{x+3}+2$
B) $\sqrt{x-3}-2$	D) $\sqrt{x-3}-2$

(2) The distance between the two points $(4,3)$ and $(1,-2)$ is

A) $\sqrt{50}$	C) $\sqrt{34}$
B) $\sqrt{10}$	D) $\sqrt{26}$

(3) If a circle has radius 1.5 cm, what is the length of an arc subtended by a central angle of 2 rad ?

A) $\frac{4}{3}$ cm	C) $\frac{3}{4}$ cm
B) 3 cm	D) $\frac{1}{3}$ cm

(4) If $f(x) = \sqrt{x^2-4}$, then the domain of f is

A) $\mathbb{R}-\{-2,2\}$	C) $(-\infty,-2]\cup[2,\infty)$
B) $[-2,2]$	D) $\mathbb{R}$

(5) The center and radius of the circle $x^2+y^2+2x-4y=4$ are

A) $(1,-2)$ and 9	C) $(-1,2)$ and 3
B) $(-1,2)$ and 9	D) $(1,-2)$ and 3

(6) The solution set of the inequality $x^2-8x+12\geq 0$ is

A) $(-\infty,2]\cup[6,\infty)$	C) $(-\infty,3]\cup[4,\infty)$
B) $[2,6]$	D) $[3,4]$

(7) The equation of the horizontal line passes through the point $(5,-3)$ is

A) $x=-3$	C) $y=-3$
B) $y=5$	D) $x=5$

(8) The solution set of the inequality $|2x+5|<7$ is

A) $(-6,1)$	C) $(-\infty,6]\cup[1,\infty)$
B) $(-\infty,-6)\cup(1,\infty)$	D) $[-6,1]$

(9) If the graph of the function $f(x)=\sqrt{x}$ is shifting to the right 3 units and then it is shifting upward 2 units, thus the new graph can be represented by

A) $\sqrt{x+3}-2$	C) $\sqrt{x+3}+2$
B) $\sqrt{x-3}+2$	D) $\sqrt{x-3}-2$

(10) The function $f(x)=\sin x+x^3$ is

A) even	C) odd
B) neither even nor odd	D) even and odd

(11) The center and radius of the circle $x^2+y^2-2x+4y=4$ are

A) $(1,-2)$ and 9	C) $(-1,2)$ and 3
B) $(-1,2)$ and 9	D) $(1,-2)$ and 3

(12) If $\sin\theta>0$ and $\tan\theta>0$, then the angle θ lies in the

A) first quadrant	C) third quadrant
B) second quadrant	D) fourth quadrant

(13) If a circle has radius 3 cm, what is the length of an arc subtended by a central angle of $\frac{2\pi}{3}$ rad ?

A) $\frac{2\pi}{9}$ cm	C) 2π cm
B) $\frac{9}{2\pi}$ cm	D) $\frac{1}{2\pi}$ cm

(14) If $f(x)=x^2$ and $g(x)=\sqrt{4-x}$, then the domain of the function $f+g$ is

A) $[4,\infty)$	C) $\mathbb{R}$
B) $(-\infty,-4]$	D) $(-\infty,4]$

(15) $\tan\frac{5\pi}{6} =$ $\frac{180}{6} = 30$ 150

A) $-\frac{1}{\sqrt{3}}$

B) $\sqrt{3}$

C) $\frac{1}{\sqrt{3}}$

D) $-\sqrt{3}$

(16) The distance between the two points (4,3) and (1,2) is

A) $\sqrt{50}$

B) $\sqrt{10}$ $\sqrt{(x_2-x_1)^2+(y_2-y_1)^2} = \sqrt{9}$

C) $\sqrt{34}$

D) $\sqrt{26}$

(17) The solution set of the inequality $x^2 - 7x + 12 \le 0$ is

A) $(-\infty,2]\cup[6,\infty)$

B) $[2,6]$

C) $(-\infty,3]\cup[4,\infty)$

D) $[3,4]$

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(18) $\sin(x+\frac{\pi}{6}) =$ $\frac{180}{6}$ 30

A) $\frac{\sqrt{3}\sin x - \cos x}{2}$

B) $\frac{\sqrt{3}\sin x + \cos x}{2}$

C) $\frac{\sin x - \sqrt{3}\cos x}{2}$

D) $\frac{\sin x + \sqrt{3}\cos x}{2}$

(19) If $\sin\theta = -\frac{3}{5}$, where $\pi < \theta < \frac{3\pi}{2}$, then $\sec\theta =$

A) $-\frac{5}{3}$

B) $\frac{4}{5}$

C) $-\frac{5}{4}$

D) $\frac{5}{4}$

(20) If $f(x) = \sqrt{x^2+1}$, then the domain of f is

A) $\mathbb{R}$

B) $(-\infty,-1]\cup[1,\infty)$

C) $[-1,1]$

D) $\mathbb{R} - \{-1,1\}$

(21) $\lfloor -2.3 \rfloor =$

A) 2.3

B) −3

C) −2.3

D) −2

(22) If $f(x)=x^2-1$ and $g(x)=\sqrt{x}$, then $(f\circ g)(x)=$

A) $x-1$
B) $\sqrt{x^2-1}$
C) $1-x$
D) $\sqrt{x}-1$

(23) The equation of the line with slope 6 and y-intercept -5 is

A) $y+6x-5=0$
B) $y-6x-5=0$
C) $y+6x+5=0$
D) $y-6x+5=0$

6 -5 $y=6x-5$

(24) The domain of the function $f(x)=\dfrac{3x+5}{x^2-x-12}$ is

A) $\mathbb{R}-\{3,4\}$
B) $\mathbb{R}-\{-4,3\}$
C) $\mathbb{R}-\{-3,4\}$
D) $\mathbb{R}-\{-4,-3\}$

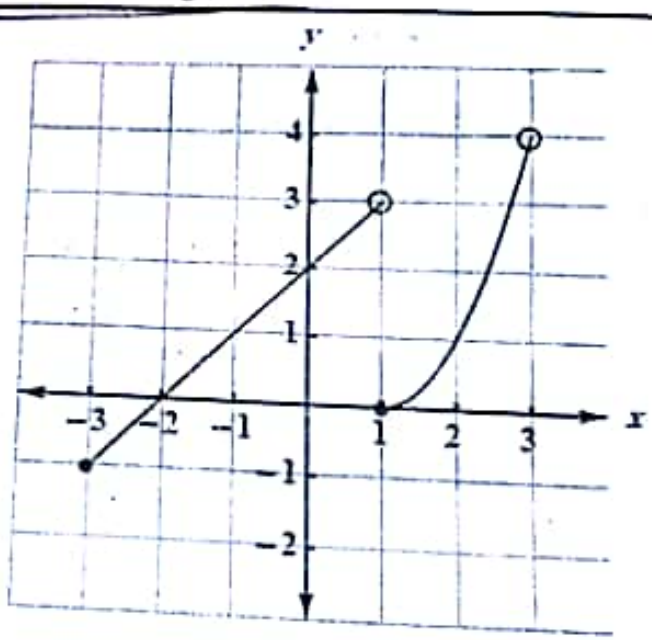
(25) The formula for the function $f(x)$ graphed in the next figure is

A) $f(x)=\begin{cases} x+2; & -3\le x<1 \\ (x-1)^2; & 1\le x<3 \end{cases}$

B) $f(x)=\begin{cases} x-2; & -3\le x<1 \\ (x+1)^2; & 1\le x<3 \end{cases}$

C) $f(x)=\begin{cases} x-2; & -3<x\le 1 \\ (x+1)^2; & 1<x\le 3 \end{cases}$

D) $f(x)=\begin{cases} x+2; & -3<x\le 1 \\ (x-1)^2; & 1<x\le 3 \end{cases}$



Best Wishes