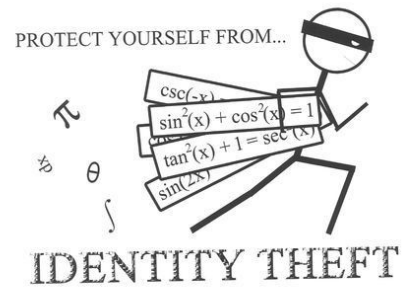


Trigonometry Quiz 3 (Functions)

Math 30-1



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Part I: Multiple Choice and Numerical Response

Use the following information to answer the next question.

A student draws an angle of $-\frac{17\pi}{6}$ and makes the following statements.

Statement 1: The reference angle for $-\frac{17\pi}{6}$ is $-\frac{\pi}{6}$.

Statement 2: The angle terminates in Quadrant 2.

Statement 3: A positive co-terminal in degrees is 1290° .

Statement 4: A negative co-terminal angle in radians is $-\frac{11\pi}{6}$.

Statement 5: If Point P lies on the intersection of the unit circle and the terminal arm of $-\frac{17\pi}{6}$, then the coordinates of point P are $\left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$.

Numerical Response #1:

The two true statements are statements ____ and ____.

Multiple Choice #1:

Determine the ratio for $\cos \theta$ if $\sin \theta = \frac{j}{k}$ and $\cot \theta = -\frac{h}{j}$

A. $-\frac{j}{h}$

B. $-\frac{h}{k}$

C. $\frac{j}{h}$

D. $\frac{h}{k}$

Multiple Choice #2:

The graph of the function $y = 4\cos(3\theta)$ is shifted $\frac{\pi}{6}$ to the right. The equation of the transformed function is

A. $y = 4\cos\left(3\theta - \frac{\pi}{6}\right)$

B. $y = 4\cos\left(3\theta + \frac{\pi}{6}\right)$

C. $y = 4\cos\left(3\theta - \frac{\pi}{2}\right)$

D. $y = 4\cos\left(3\theta + \frac{\pi}{2}\right)$

Multiple Choice #3:

A sinusoidal function has an equation $y = \sin(4x + \pi)$. The value of the period and the horizontal phase shift are, respectively:

- A. $\frac{\pi}{2}, \frac{\pi}{4}$ B. $\frac{\pi}{2}, \pi$ C. $4, \pi$ D. $4, \frac{\pi}{4}$

Multiple Choice #4:

The function $f(x) = \tan(4x)$ has a domain, where $n \in I$, of:

- A. $x \neq \frac{\pi}{4} + \frac{n\pi}{2}$ B. $x \neq \frac{\pi}{4} + \frac{n\pi}{4}$ C. $x \neq \frac{\pi}{8} + \frac{n\pi}{2}$ D. $x \neq \frac{\pi}{8} + \frac{n\pi}{4}$

Numerical Response #2:

A sinusoidal function has a minimum at $(2, -4)$ and its next maximum is at $(6, 8)$. The amplitude and period are _____ and _____ respectively.

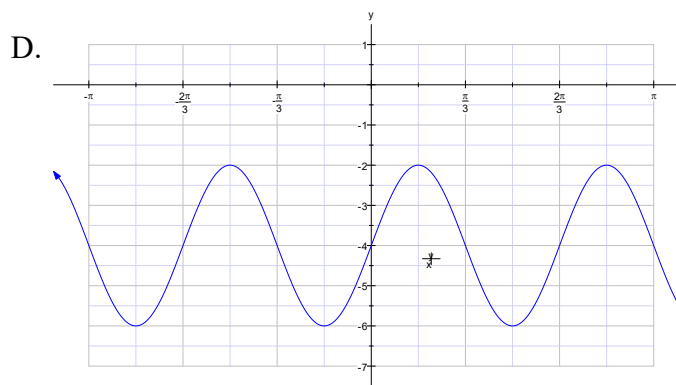
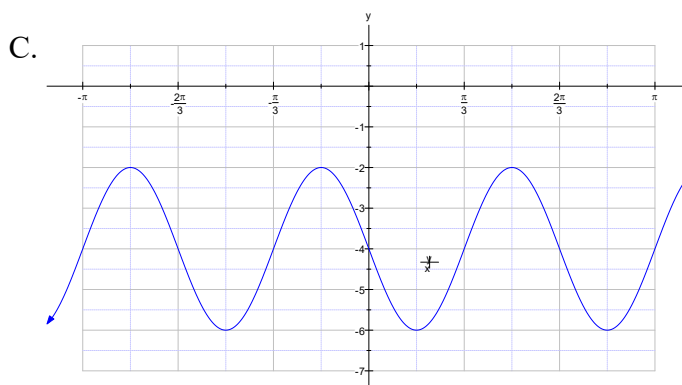
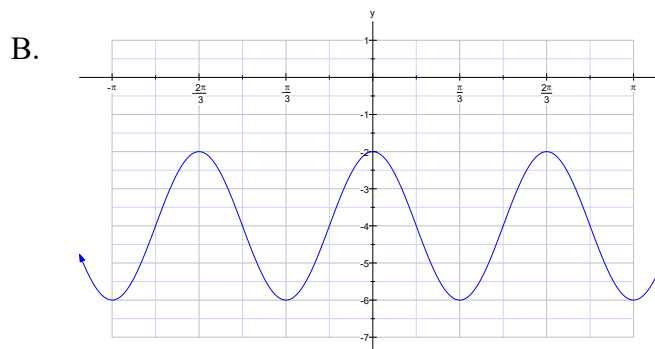
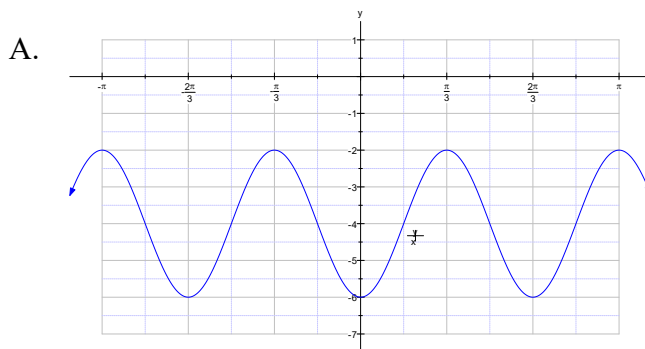
Multiple Choice #5:

A point $P(3, -5)$ lies on the terminal arm of an angle θ in standard position. The value of $\sin(\pi - \theta)$ is:

- A. $\frac{3}{\sqrt{34}}$ B. $-\frac{3}{\sqrt{34}}$ C. $\frac{5}{\sqrt{34}}$ D. $-\frac{5}{\sqrt{34}}$

Multiple Choice #6:

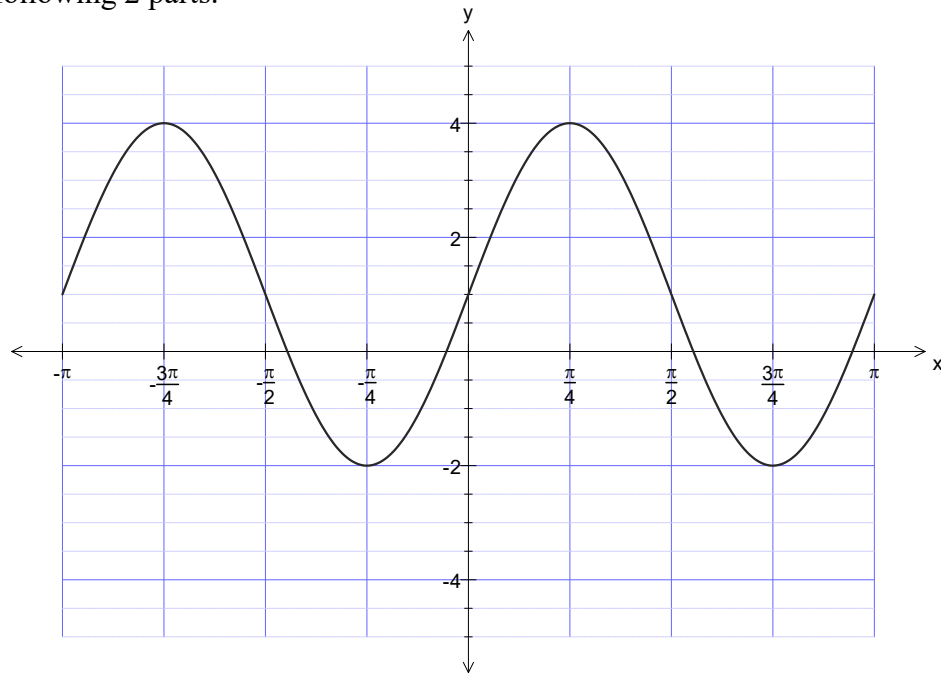
The graph which best represents $y = -2 \cos\left(3\left(x - \frac{\pi}{3}\right)\right) - 4$ is



Written Response:

Communicate your work!!

Use the graph for the following 2 parts.



- a) **2 marks.** Write an equation of the graph (where minimal phase shift has occurred) in the form $y = a \sin[b(x - c)] + d$ where $a > 0$:

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- b) **2 marks.** Write an equation of the graph (where minimal phase shift has occurred) in the form $y = a \cos[b(x - c)] + d$ where $a < 0$: