Mid-Year Exam REVIEW PACKET: UNIT 2

Name: _____ **Date:** _____ **Period:** _____

1.) In which quadrant is the terminal side of the angle θ?

$$\theta = -\frac{9\pi}{5}$$

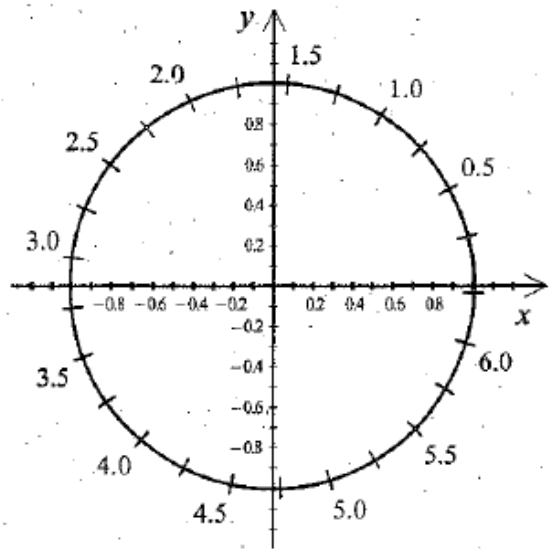
[A] Quadrant I [B] Quadrant II [C] Quadrant III [D] Quadrant IV

2.) In which quadrant is the terminal side of the angle θ?

$$\theta = 315°$$

[A] Quadrant I [B] Quadrant II [C] Quadrant III [D] Quadrant IV

3.) Use the unit circle and a straightedge to approximate the value of the expression.



$\cos(-4.75)$

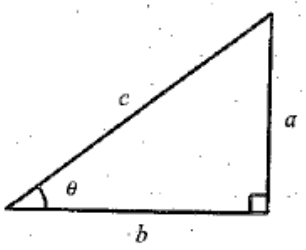
[A] 0.04 [B] -0.04 [C] 1.00 [D] -1.00

4.) $\cot\left(-\frac{7\pi}{6}\right)$

[A] $-\sqrt{3}$ [B] $\frac{1}{2}$ [C] $-\frac{\sqrt{3}}{2}$ [D] $-\frac{\sqrt{3}}{3}$

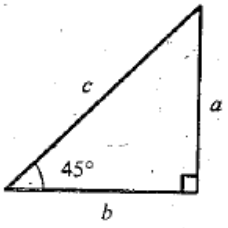
5.) Identify the ratio that defines the trigonometric function of the angle θ.

$\cos\theta$



[A] $\frac{c}{a}$ [B] $\frac{a}{b}$ [C] $\frac{c}{b}$ [D] $\frac{b}{c}$

6.) Identify the ratio $\frac{a}{c}$ for the indicated angle and find its value.



[A] $\tan 45° = 1$ [B] $\csc 45° = \frac{\sqrt{2}}{2}$ [C] $\sin 45° = \frac{\sqrt{2}}{2}$ [D] $\cos 45° = \frac{\sqrt{2}}{2}$

7.) Let θ be an acute angle. Use the given function value and trigonometric identities to find the indicated trigonometric function.

If $\sin\theta = \frac{8}{17}$, find $\csc\theta$.

[A] $\frac{15}{17}$ [B] $\frac{17}{8}$ [C] $\frac{15}{8}$ [D] $\frac{17}{15}$

8.) Use the fundamental trigonometric identities to determine the simplified form of the expression.

$\cot\beta \sin\beta$

[A] $\cos\beta$ [B] $\csc\beta$ [C] $\sec\beta$ [D] $\tan\beta$

9.) A 20-foot ladder makes an angle of 62° with the ground as it leans against a wall. How far up the wall does the ladder reach?

[A] 22.65 ft [B] 17.66 ft [C] 9.39 ft [D] 37.61 ft

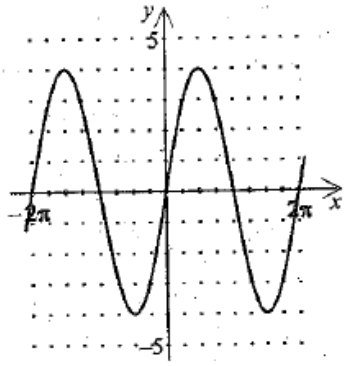
10.) Find the exact value of the function. $\cot(-390°)$

[A] $\frac{2\sqrt{3}}{3}$ [B] $\frac{\sqrt{2}}{2}$ [C] 0 [D] $-\sqrt{3}$

11.) Give the number of full cycles of the function that are found in the interval.
$y = 2\sin x$ on the interval $[-5\pi, 11\pi]$

[A] 9 [B] 8 [C] 7 [D] 16

12.) Identify the function shown in the graph.



[A] $y = 4\sin x$ [B] $y = 4\cos x$ [C] $y = \cos 4x$ [D] $y = \sin 4x$

13.) Find the amplitude and the period of the function.

$y = -1.5\cos\frac{x}{2}$

[A] Amplitude = 1.5
Period = $\frac{1}{2}$

[B] Amplitude = 1.5
Period = 4π

[C] Amplitude = −1.5
Period = $\frac{1}{2}$

[D] Amplitude = −1.5
Period = 4π

14.) Identify the function that has the given amplitude and period.

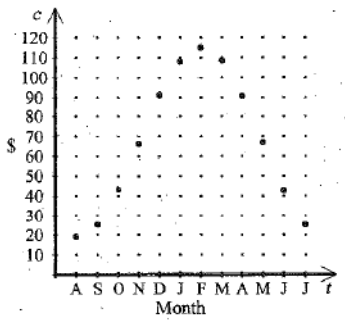
Amplitude = 1.5, period = $\frac{2\pi}{3}$

[A] $y = 0.75\cos\frac{2\pi x}{3}$ [B] $y = 0.75\cos 3x$ [C] $y = 1.5\cos 3\pi x$ [D] $y = 1.5\cos 3x$

15.) The data below represent the average monthly cost of natural gas in an Oregon home.

Month	Aug	Sep	Oct	Nov	Dec	Jan
Cost ($)	19.80	26.24	44.33	67.35	92.38	108.96

Month	Feb	Mar	Apr	May	Jun	Jul
Cost ($)	115.90	109.46	91.88	67.85	43.83	26.24



15.) Which sine function best describes the data?

[A] $c(t) = 48.1 \sin\left(\frac{\pi t}{6} - \frac{2\pi}{3}\right) + 67.9$

[B] $c(t) = 48.1 \sin\left(\frac{\pi t}{8} - 12\right) + 19.8$

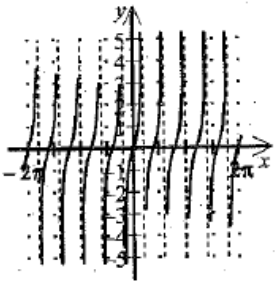
[C] $c(t) = 48.1 \sin\left(\frac{\pi t}{4} - \frac{2\pi}{3}\right) + 19.8$

[D] $c(t) = 48.1 \sin\left(\frac{\pi t}{6} - \frac{\pi}{12}\right) + 67.9$

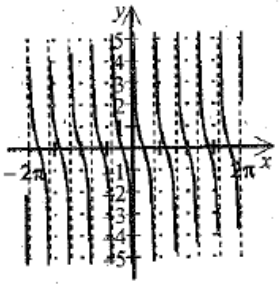
16.) Identify the graph of the function.

$y = \tan\frac{5x}{2}$

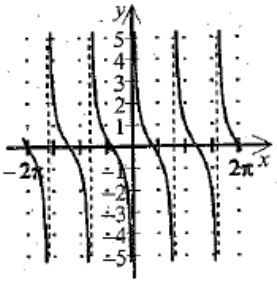
[A]



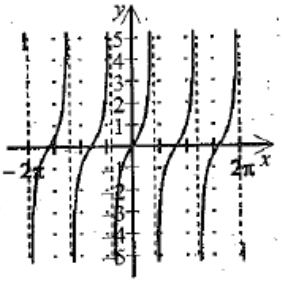
[B]



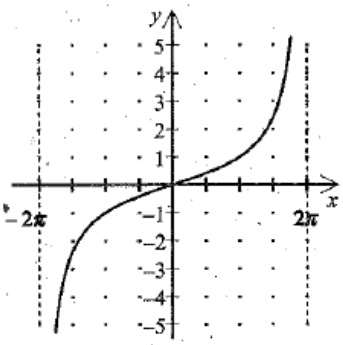
[C]



[D]



17.) Identify the function that is graphed.



[A] $y = -\cot\frac{x}{4}$ [B] $y = -\tan 4x$ [C] $y = \tan\frac{x}{4}$ [D] $y = \cot 4x$

18.) Identify the equation that matches the description of the function.

A secant function has a phase shift of $-\frac{5\pi}{4}$ and a period of $\frac{8\pi}{3}$.

[A] $y = \sec\left(\frac{3x}{4} - \frac{15\pi}{16}\right)$

[B] $y = \sec\left(\frac{3x}{4} - \frac{5\pi}{4}\right)$

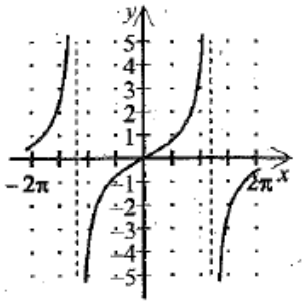
[C] $y = \sec\left(\frac{8x}{3} + \frac{15\pi}{16}\right)$

[D] $y = \sec\left(\frac{3x}{4} + \frac{15\pi}{16}\right)$

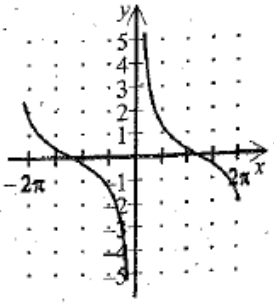
19.) Identify the graph of the function.

$$y = \cot\frac{5x}{6}$$

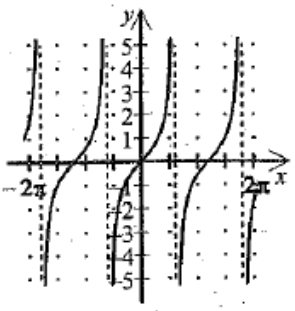
[A]



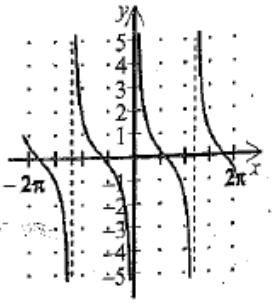
[B]



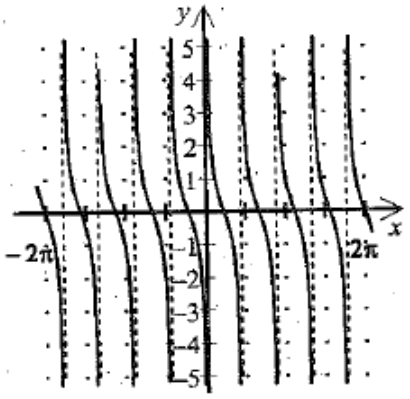
[C]



[D]



20.) Identify the function that is graphed.



[A] $y = \tan\frac{4x}{9}$ [B] $y = -\tan\frac{9x}{4}$ [C] $y = \cot\frac{9x}{4}$ [D] $y = -\cot\frac{4x}{9}$