

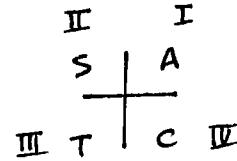
Name: _____ Class: _____ Date: _____

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Review #2 Pre-Calculus 12 Chapters 4 - 6

Completion

Complete each statement.



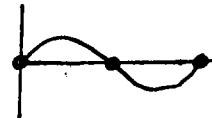
1. The cosine of an angle is negative in quadrant III (negative or positive)

2. The sine of an angle is positive in quadrant I (negative or positive)

3. The reciprocal of tangent is cotangent.

4. The smallest non-negative value for $\sin x$ occurs when the angle in standard position is $0^\circ, 180^\circ, 360^\circ$. (Answer in degrees)

vert.



5. For the function $y = a \cos(b(x - c)) + d$, d affects the displacement of the graph.

6. The period of the basic sine function is 2π or 360° .

7. The maximum value of the function $y = 3 \cos\left(\frac{\pi}{6}x\right) - 9$ is -6. $\max = -9 + 3 = -6$
(K + amp).

8. The period of the function $y = -8 \sin\left(\frac{\pi}{3}(x - 9)\right) - 3$ is 6. $\frac{2\pi}{b} = \frac{2\pi}{(\pi/3)} = 2\pi \cdot \frac{3}{\pi} = 6$

9. The phase shift of the function $y = -8 \sin\left(\frac{\pi}{12}(x - 7)\right) + 2$ is 7 unit(s) to the right.

10. $\tan x = \frac{\sin x}{\cos x}$ and $\cot x = \frac{\cos x}{\sin x}$ are known as the quotient identities.

$$\cos x = \frac{1}{2}$$

11. The general solution, in degrees, for the equation $\cos x - \frac{1}{2} = 0$ is $x = 60^\circ + 360^\circ n$, $x = 300^\circ + 360^\circ n$, $n \in \mathbb{Z}$

$$n \in \mathbb{Z}$$

<math

Matching

Match each trigonometric expression with an equal expression to form a trigonometric identity.

A. $\sin\left(\frac{\pi}{2} - \theta\right)$

B. $\cos\left(\frac{5\pi}{2} - \theta\right)$

C. $\cos\left(\theta + \frac{5\pi}{2}\right)$

C 1. $-\sin\theta$

E 2. $\cot\theta$

A 3. $\cos\theta$

D 4. $-\cot\theta$

B 5. $\sin\theta$

D. ~~$\tan\left(\theta + \frac{\pi}{2}\right)$~~ $\frac{\sin\left(\theta + \frac{\pi}{2}\right)}{\cos\left(\theta + \frac{\pi}{2}\right)} = \frac{\sin\theta \cos\frac{\pi}{2} + \cos\theta \sin\frac{\pi}{2}}{\cos\theta \cos\frac{\pi}{2} - \sin\theta \sin\frac{\pi}{2}}$

E. ~~$\tan\left(\frac{5\pi}{2} - \theta\right)$~~ $\frac{\sin\left(\frac{5\pi}{2} - \theta\right)}{\cos\left(\frac{5\pi}{2} - \theta\right)} = \frac{\sin\theta(0) + \cos\theta(1)}{\cos\theta(0) - \sin\theta(1)}$

F. ~~$\sin\left(\theta + \frac{3\pi}{2}\right)$~~ $= \frac{\cos\theta}{-\sin\theta}$

$= -\cot\theta$

Prove
the following
identities

Match the corresponding trigonometric expressions to form trigonometric identities.

A. $\frac{\sin(\alpha + \beta)}{\cos(\alpha + \beta)}$

B. $\frac{1 - \tan\alpha\tan\beta}{1 + \tan\alpha\tan\beta}$

C. $\frac{\csc\alpha \cos\alpha}{\sec\alpha \sin\alpha} = \cot^2\alpha$

D. $\tan\alpha$

E. $\tan\alpha - \sec\alpha$

E. $\frac{\sin\alpha - 1}{\cos\alpha} = \tan\alpha - \sec\alpha$

C. $(\csc\alpha - 1)(1 + \csc\alpha) = \cot^2\alpha$

A. $\frac{\sin\alpha + \cos\alpha \tan\beta}{\cos\alpha - \sin\alpha \tan\beta} = \frac{\sin(\alpha + \beta)}{\cos(\alpha + \beta)}$

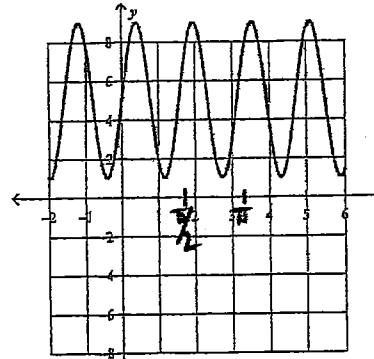
D. $\frac{\sin 4\alpha - \sin 2\alpha}{\cos 2\alpha + \cos 4\alpha} = \tan\alpha$

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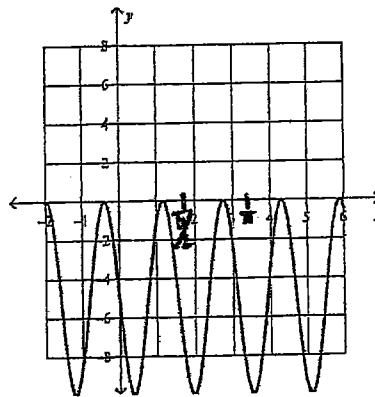
B 10. $\frac{\cos(\alpha+\beta)}{\cos(\alpha-\beta)} = \frac{1 - \tan \alpha \tan \beta}{1 + \tan \alpha \tan \beta}$

Match each equation with its graph.

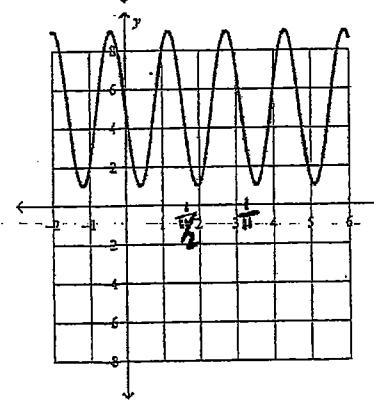
A.



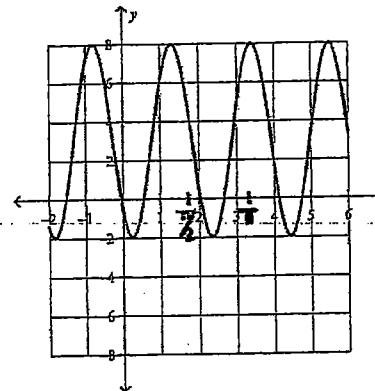
C.



B.



D.



A 11. $y = -4 \sin \left[4 \left(x + \frac{\pi}{4} \right) \right] + 5$

C 12. $y = -5 \sin \left[4 \left(x - \frac{\pi}{2} \right) \right] - 5$

D 13. $y = 5 \cos \left[-3 \left(x + \frac{\pi}{4} \right) \right] + 3$

