

Name \_\_\_\_\_

**Find the amplitude, period, or phase shift as specified.**

1) Find the amplitude of  $y = -2 \cos(4x - \pi)$ .

A) 2

B) -8

C) -4

D)  $\pi$

2) Find the period of  $y = 2 \cos\left(3x + \frac{\pi}{2}\right)$ .

A)  $\frac{2\pi}{3}$

B)  $\pi$

C)  $\frac{\pi}{2}$

D) 2

3) Find the phase shift of  $y = 4 - 2 \sin\left(5x - \frac{\pi}{4}\right)$ .

A)  $\frac{\pi}{8}$

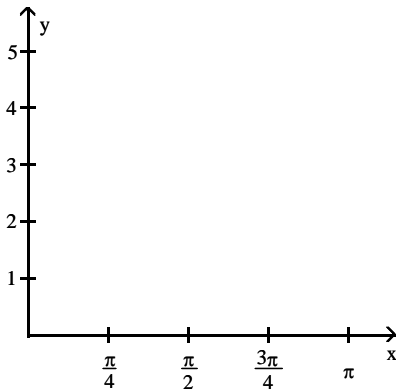
B)  $\frac{\pi}{20}$

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

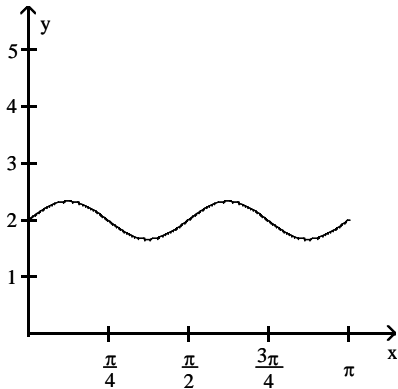
D)  $-\frac{\pi}{20}$

**Graph the function over a one-period interval.**

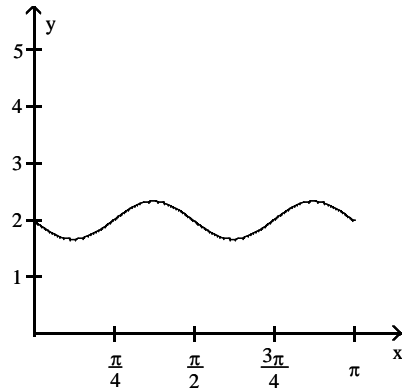
4)  $y = \frac{1}{3} \sin(2x - \pi) + 2$

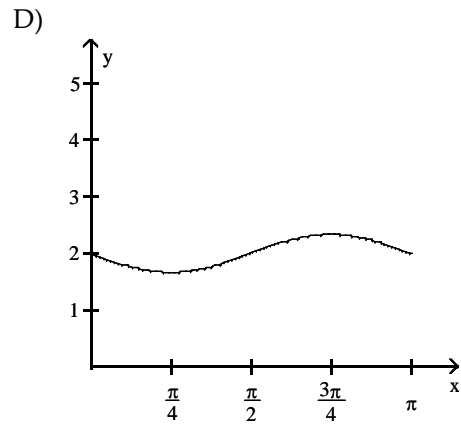
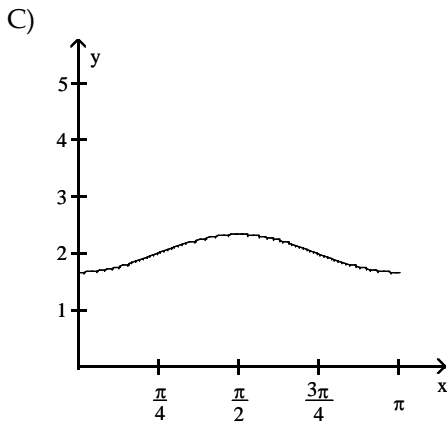


A)



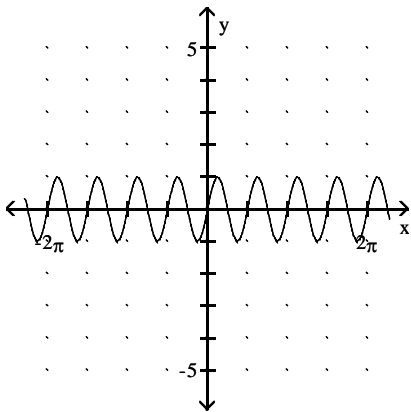
B)





Determine the equation of the function that is graphed.

5)



A)  $y = 4 \sin x$

B)  $y = \cos x + 4$

C)  $y = \cos(4x)$

D)  $y = \sin(4x)$

Find the equation for the curve in its final position.

6) The graph of  $y = \cot(x)$  is shifted a distance of  $\pi/12$  to the right, stretched by a factor of 2, translated 6 units upward, then reflected in the x-axis.

A)  $y = -2 \cot\left(x - \frac{\pi}{12}\right) + 12$

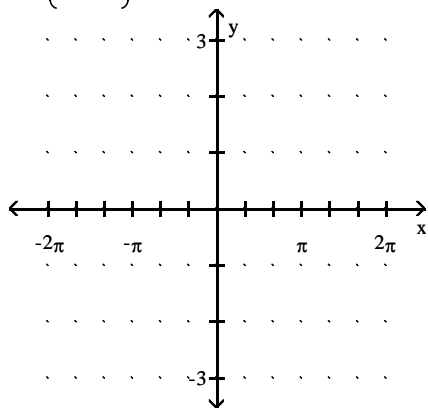
B)  $y = -2 \cot\left(x - \frac{\pi}{12}\right) + 6$

C)  $y = -2 \cot\left(x - \frac{\pi}{12}\right) - 6$

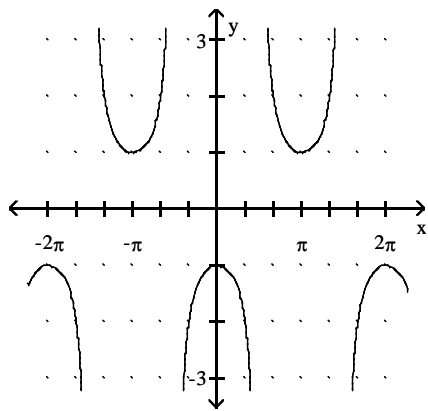
D)  $y = -2 \cot\left(x + \frac{\pi}{12}\right) - 6$

Graph the function.

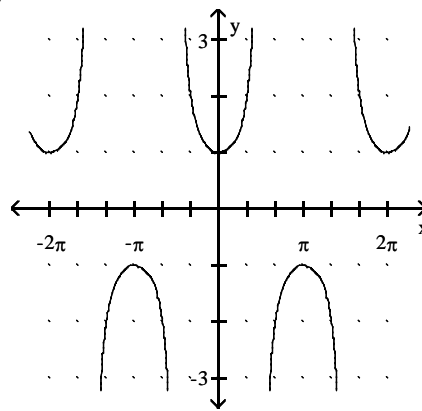
7)  $y = \csc\left(x - \frac{\pi}{2}\right)$



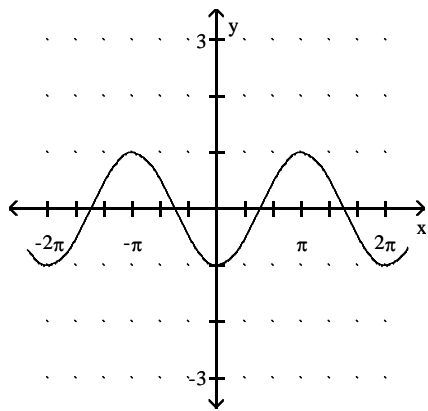
A)



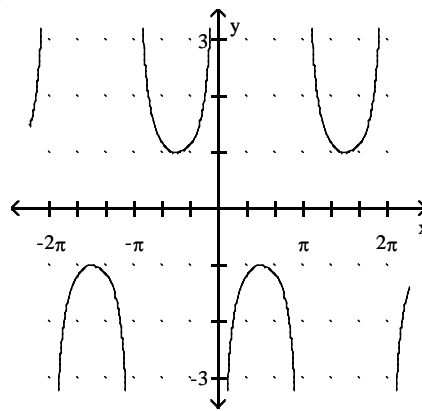
B)



C)



D)



Determine the period of the function.

8)  $y = -\tan 4t$

A)  $\frac{\pi}{8}$

B)  $\pi$

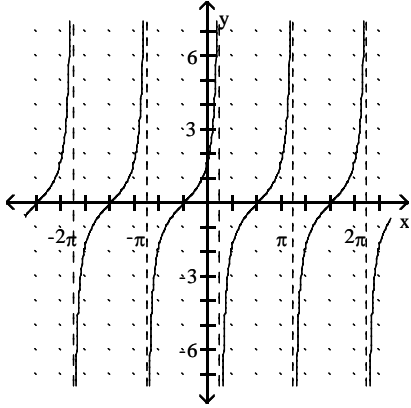
C)  $\frac{\pi}{4}$

D)  $\frac{3\pi}{4}$

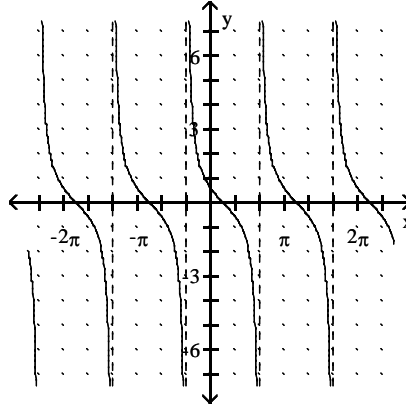
Match each function with its graph.

9) 1)  $y = -\tan\left(x - \frac{\pi}{3}\right)$     2)  $y = \tan\left(x + \frac{\pi}{3}\right)$   
 3)  $y = -\cot\left(x - \frac{\pi}{3}\right)$     4)  $y = \cot\left(x + \frac{\pi}{3}\right)$

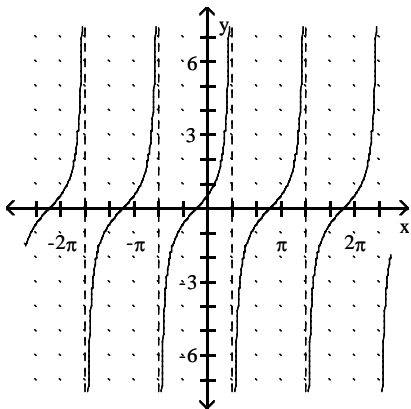
A)



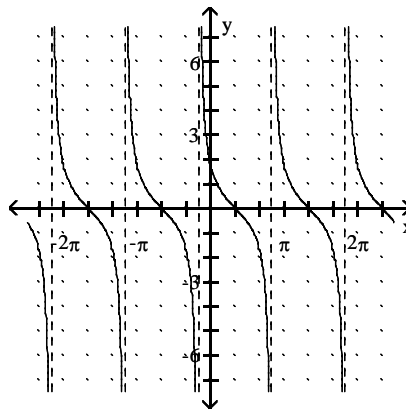
B)



C)



D)



A) 1D, 2A, 3C, 4B

B) 1A, 2B, 3C, 4D

C) 1C, 2B, 3D, 4A

D) 1A, 2D, 3B, 4C

Use the fundamental identities to find an equivalent expression involving only sines and cosines, and then simplify it.

10)  $\sin^2\theta + \sin\theta - 1 + \cos^2\theta$

A)  $\frac{1 + \sin^2\theta \cos^2\theta}{\cos^2\theta}$

B)  $\frac{1 + \cos^2\theta}{\cos^2\theta}$

C)  $\frac{1 + \sin\theta \cos\theta}{\cos\theta}$

D)  $\sin\theta$

11)  $\cot\theta \sin\theta - \tan\theta \cos\theta$

A)  $\cos\theta - \sin\theta$

B)  $\frac{\sin\theta + \cos\theta}{\sin\theta \cos\theta}$

C)  $\frac{1}{\sin\theta \cos\theta}$

D)  $\frac{1}{\sin\theta \cos^2\theta}$

Use the fundamental identities to find the value of the trigonometric function.

12) Find  $\cos \alpha$  if  $\tan \alpha = \frac{2}{5}$  and  $\alpha$  is in quadrant III.

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

B)  $\frac{\sqrt{33}}{4}$

C)  $-\frac{5\sqrt{29}}{29}$

D)  $-\frac{\sqrt{11}}{6}$

Use the fundamental identities to simplify the expression.

13)  $\cos \theta - \cos \theta \sin^2 \theta$

A)  $\tan^2 \theta$

B)  $\sin \theta$

C)  $\sec^2 \theta$

D)  $\cos^3 \theta$

Simplify the expression.

14)  $\frac{\cot x}{\cos x} - \csc x$

A)  $\tan x$

B)  $\sec x$

C) 0

D) 1

Multiply and simplify.

15)  $(1 - \cos x)(1 + \cos x)$

A)  $\cos^2 x - 1$

B)  $\sin^2 x$

C)  $\sin x + 2 \csc x$

D)  $1 + 2 \sin^2 x$

Factor and simplify the expression.

16)  $\sec^4 x - 2 \sec^2 x \tan^2 x + \tan^4 x$

A) 1

B)  $\sec^2 x + \tan^2 x$

C)  $\sec^2 x (1 + \tan^2 x)$

D) 2

Identify the equation as either an identity or not.

17)  $(\sin x + \cos x)^2 = 1$

A) Not an identity

B) Identity

Use the sum/difference identities to simplify the expression. Do not use a calculator.

18)  $\cos(-20^\circ) \cos 70^\circ + \sin(-20^\circ) \sin 70^\circ$

A) 1

B) 0

C) -1

D)  $\frac{1}{2}$

Find the exact value of the expression.

19)  $\cos \frac{5\pi}{18} \sin \frac{\pi}{9} - \cos \frac{\pi}{9} \sin \frac{5\pi}{18}$

A)  $\frac{1}{4}$

B)  $\frac{1}{2}$

C)  $\frac{\sqrt{3}}{2}$

D) 1

Find the exact value by using a sum or difference identity.

20)  $\sin \frac{11\pi}{12}$

A)  $\frac{-\sqrt{2}(\sqrt{3}-1)}{4}$

B)  $\frac{\sqrt{2}(\sqrt{3}-1)}{4}$

C)  $\frac{\sqrt{2}(\sqrt{3}+1)}{4}$

D)  $\frac{-\sqrt{2}(\sqrt{3}+1)}{4}$

21)  $\tan(-15^\circ)$

A)  $\sqrt{3} - 2$

B)  $\frac{\sqrt{3} + 4}{2}$

C)  $-\sqrt{3} + 2$

D)  $\frac{\sqrt{3} - 4}{2}$

**Determine if the equation is an identity.**

22)  $\sin(x + y) \cos y - \cos(x + y) \sin y = \sin x$

A) Identity

B) Not an identity

**Find the exact value by using a half-angle identity.**

23)  $\sin\left(\frac{5\pi}{12}\right)$

A)  $\frac{1}{2}\sqrt{2 - \sqrt{3}}$

B)  $\sqrt{2 + \sqrt{3}}$

C)  $\sqrt{2 - \sqrt{3}}$

D)  $\frac{1}{2}\sqrt{2 + \sqrt{3}}$

**Identify the equation as either an identity or not.**

24)  $\sin 6x \tan 3x = 2 \sin^2 3x$

A) Identity

B) Not an identity

**Decide whether the expression is or is not an identity.**

25)  $\tan^2 \frac{x}{2} = \frac{1 - \cos x}{1 + \cos x}$

A) Identity

B) Not an identity

## Answer Key

Testname: TRIG REVIEW 2

- 1) A
- 2) A
- 3) B
- 4) D
- 5) D
- 6) C
- 7) A
- 8) C
- 9) A
- 10) D
- 11) A
- 12) C
- 13) D
- 14) C
- 15) B
- 16) A
- 17) A
- 18) B
- 19) B
- 20) B
- 21) A
- 22) A
- 23) D
- 24) A
- 25) A