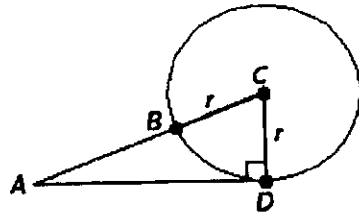


1. Find  $r$  if  $AB = 16$  and  $AD = 24$ .

- a)  $r = 6$
- b)  $r = 5$
- c)  $r = 13$
- d)  $r = 10$
- e)  $r = 11$



2. Indicate the quadrants in which the terminal side of  $\theta$  must lie in order that  $\sin \theta$  is negative and  $\tan \theta$  is negative.

- a) IV
- b) III
- c) I
- d) II
- e) None of the above

3. Find  $\sec \theta$  if  $\tan \theta = \frac{3}{4}$  and  $\theta$  terminates in quadrant III.

- a)  $\sec \theta = -\frac{4}{3}$
- b)  $\sec \theta = -\frac{5}{4}$
- c)  $\sec \theta = \frac{5}{4}$
- d)  $\sec \theta = \frac{4}{3}$
- e)  $\sec \theta = -\frac{4}{5}$

4. Find an expression that is equal to  $(\sin \theta - \cos \theta)^2 - 1$ .

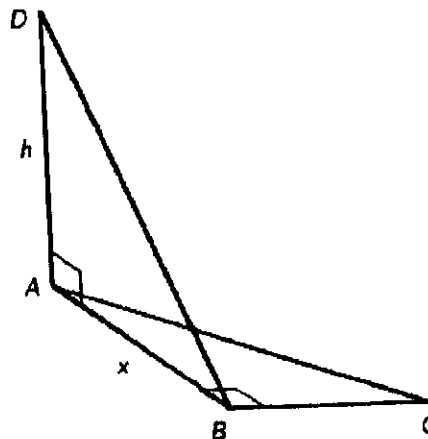
- a)  $-2 \sin \theta \cos \theta$
- b)  $\sin^2 \theta$
- c)  $2 \sin \theta \cos \theta$
- d)  $-\sin^2 \theta$
- e)  $\cot^2 \theta$

5. Find the exact value of  $\sec 45^\circ$ .

- a)  $\sqrt{2}$
- b)  $-5\sqrt{2}$
- c)  $5\sqrt{2}$
- d)  $-\sqrt{2}$
- e) 0

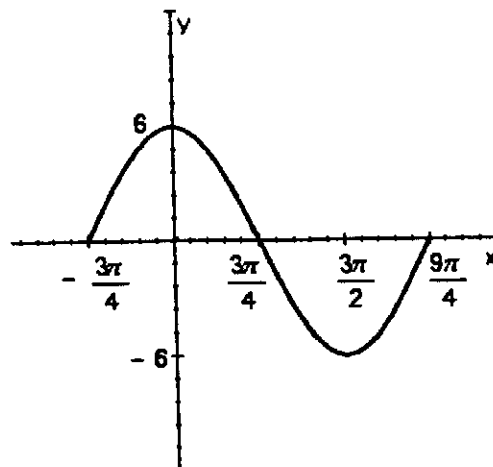
6. The figure shows two right triangles drawn at  $90^\circ$  to each other. If  $\angle ABD = 60^\circ$ ,  $C = 45^\circ$ , and  $BC = 43$ , find  $h$ .

- a)  $43\sqrt{3}$
- b)  $\frac{43}{2}$
- c)  $\frac{43}{\sqrt{3}}$
- d) 86
- e) 34



13. Give the amplitude and period of the given graph.

- a) Amplitude = 6, period =  $\pi$
- b) Amplitude = 5, period =  $3\pi$
- c) Amplitude = 6, period =  $\frac{5\pi}{2}$
- d) Amplitude = 6, period =  $3\pi$
- e) Amplitude = 5, period =  $\pi$

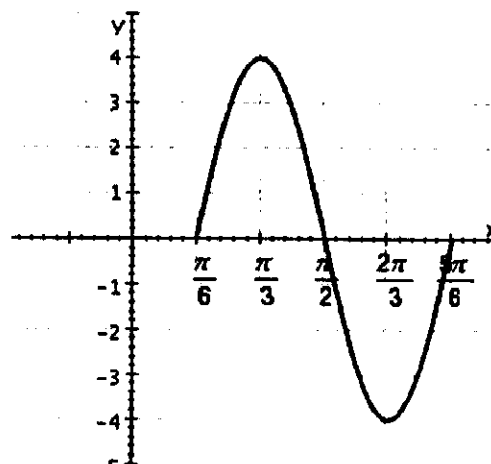


14. Identify the amplitude and phase shift for the equation  $y = 2 \cos\left(2x + \frac{\pi}{2}\right)$ .

- a) Amplitude = 3 and phase shift =  $-\frac{\pi}{4}$
- b) Amplitude = 2 and phase shift =  $-\frac{\pi}{4}$
- c) Amplitude = 2 and phase shift =  $\frac{\pi}{4}$
- d) Amplitude = 3 and phase shift =  $-\frac{\pi}{4}$
- e) Amplitude = 2 and phase shift =  $\frac{\pi}{2}$

15. The graph below is one complete cycle of the graph of an equation containing a trigonometric function. Find an equation to match the graph.

- a)  $y = -8 \sin\left(3x - \frac{\pi}{2}\right)$
- b)  $y = 6 \sin\left(3x - \frac{\pi}{2}\right)$
- c)  $y = 4 \sin\left(3x - \frac{\pi}{2}\right)$
- d)  $y = 3 \sin\left(3x \frac{\pi}{2}\right)$
- e)  $y = 7 \sin\left(3x - \frac{\pi}{2}\right)$



30. Identify the graph of  $r = 2 \cos 3\theta$ .

