

WARM UP

$$\sin \pi = 0$$

$$\sin \frac{5\pi}{3} = -\frac{\sqrt{3}}{2}$$

$$\tan \frac{7\pi}{6} = \frac{\sqrt{3}}{3}$$

$$\cos \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$$

$$\cos \frac{3\pi}{2} = 0$$

$$\tan \frac{4\pi}{3} = \sqrt{3}$$

Homework Answers

13. $\cos x$ 14. $-\sin x$ 15. $-\sin x$ 16. $\frac{1}{\cos x}$

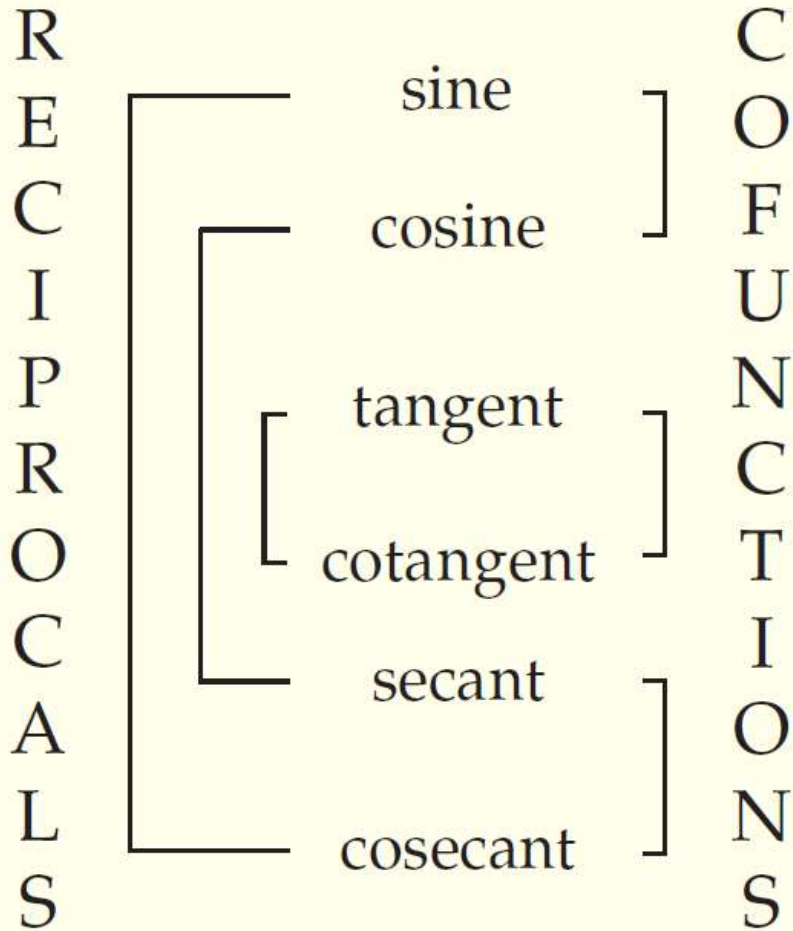
17. $-\frac{1}{\cos x}$ 18. $\frac{\cos x}{\sin x}$

25. $\frac{4+\sqrt{2}}{6}$ 26. $\frac{-\sqrt{3}+\sqrt{15}}{8}$ 27. $\frac{2\sqrt{6}-\sqrt{3}}{10}$ 28. $\frac{\sqrt{14}+3\sqrt{2}}{8}$

29. **-0.393** 30. **0.9196** 31. **0.993**

32. **-0.1196** 33. **-2.34** 34. **-0.1204**

Cofunction Identities



$$\sin x = \cos\left(\frac{\pi}{2} - x\right)$$

$$\tan x = \cot\left(\frac{\pi}{2} - x\right)$$

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

$$\cos x = \sin\left(\frac{\pi}{2} - x\right)$$

$$\cot x = \tan\left(\frac{\pi}{2} - x\right)$$

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

Write each function in terms of its cofunction

$$\sin 35^\circ$$

$$\csc \frac{2\pi}{3}$$

$$\cos 60^\circ$$

$$\sec \frac{\pi}{4}$$

$$\tan \frac{\pi}{3}$$

$$\cot \frac{7\pi}{6}$$

Double Angle Identities

$$\sin 2x = \sin(x + x) = \sin x \cos x + \sin x \cos x = 2 \sin x \cos x$$

$$\cos 2x = \cos(x + x) = \cos x \cos x - \sin x \sin x = \cos^2 x - \sin^2 x$$

$$\tan 2x = \tan(x + x) = \frac{\tan x + \tan x}{1 - \tan x \cdot \tan x} = \frac{2 \tan x}{1 - \tan^2 x}$$

Double Angle Identities

Forms of cos 2x

$$\sin 2x = 2 \sin x \cos x$$

$$\cos 2x = \cos^2 x - \sin^2 x$$

$$\tan 2x = \frac{2 \tan x}{1 - \tan^2 x}$$

$$\cos 2x = 1 - 2 \sin^2 x$$

$$\cos 2x = 2 \cos^2 x - 1$$