

3. (a) Convert $8\pi/9$ radians to degrees.

(b) Convert -405° to radians.

4. Find the exact value of the given trigonometric expression.

(a) $\sin -5\pi/6$

(d) $\csc -25\pi/4$

(b) $\cos 120^\circ$

(e) $\sec 150^\circ$

(c) $\tan -60^\circ$

(f) $\cot 3\pi/2$

5. Recall the following Pythagorean identities.

$$\sin^2 x + \cos^2 x = 1, \quad \tan^2 x + 1 = \sec^2 x, \quad 1 + \cot^2 x = \csc^2 x$$

(a) Write $\sin t$ in terms of $\cos t$, where t terminate in quadrant III.

(b) Write $\cos t$ in terms of $\tan t$, where t terminate in quadrant IV.

6. Solve each of the following systems of equations. If no solution exists, write *no solution*. If there are an infinite number of solutions, enter the general solution in terms of t , where t is any real number.

$$(a) \begin{cases} 2x - 6y = 10 \\ -3x + 9y = -15 \end{cases}$$

$$(b) \begin{cases} \frac{3}{2}x - \frac{1}{3}y = \frac{1}{2} \\ 2x - \frac{1}{2}y = -\frac{1}{2} \end{cases}$$

7. Solve each of the following systems of equations. If no solution exists, write *no solution*. If there are an infinite number of solutions, enter the general solution in terms of t , where t is any real number.

$$(a) \begin{cases} x & & -4z & = & 1 \\ 2x & -y & -6z & = & 4 \\ 2x & +3y & -2z & = & 8 \end{cases}$$

$$(b) \begin{cases} x & +2y & -z & = & 1 \\ 2x & +3y & -4z & = & -3 \\ 3x & +6y & -3z & = & 4 \end{cases}$$