

[2] $\csc \theta > 0$ IN QUADRANTS 1, 2 $\left(\frac{+}{-}\right)$
SINCE $\csc \theta = \frac{1}{y}$ AND $y > 0$ $\left(\frac{+}{-}\right)$ IN QUADRANTS 1, 2

$$[3] [a] \frac{x}{y} = \boxed{\frac{-\frac{1}{2}}{-\frac{\sqrt{3}}{2}}} \textcircled{1} = -\frac{1}{2} \cdot -\frac{2}{\sqrt{3}} = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \boxed{\frac{\sqrt{3}}{3}} \textcircled{1}$$

$$[b] \frac{1}{y} = \boxed{\frac{1}{-\frac{\sqrt{2}}{2}}} \textcircled{1} = -\frac{2}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \boxed{-\sqrt{2}} \textcircled{\frac{1}{2}}$$

$$[c] \frac{y}{x} \rightarrow \boxed{\frac{-1}{0} \text{ UNDEFINED}} \textcircled{1}$$

$$[d] \frac{1}{x} = \boxed{\frac{1}{-\frac{\sqrt{3}}{2}}} \textcircled{1} = -\frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \boxed{-\frac{2\sqrt{3}}{3}} \textcircled{\frac{1}{2}}$$

$$[4] [a] \left| \frac{\pi}{2} - \frac{7\pi}{22} \right| = \frac{11\pi - 7\pi}{22} = \frac{4\pi}{22} = \left| \frac{2\pi}{11} \right| \textcircled{1}$$

$$[b] [i] \left| 20 \text{ RADIANS} * \frac{180^\circ}{\pi \text{ RADIANS}} \right| = \left| \frac{3600^\circ}{\pi} \right| \textcircled{\frac{1}{2}}$$

$$[ii] \left| 84^\circ * \frac{\pi \text{ RADIANS}}{180^\circ} \right| = \left| \frac{7\pi}{15} \text{ RADIANS} \right| \textcircled{\frac{1}{2}}$$

$$[5] [a] \frac{y}{x} = \frac{\frac{-2\sqrt{10}}{11}}{-\frac{9}{11}} \textcircled{1} = -\frac{2\sqrt{10}}{11} \cdot \frac{-11}{9} = \frac{2\sqrt{10}}{9} \textcircled{\frac{1}{2}}$$

$$[b] x = -\frac{9}{11} \textcircled{\frac{1}{2}}$$

$$[c] \frac{1}{y} = \frac{1}{\frac{-2\sqrt{10}}{11}} \textcircled{1} = -\frac{11}{2\sqrt{10}} \cdot \frac{\sqrt{10}}{\sqrt{10}} = -\frac{11\sqrt{10}}{20} \textcircled{\frac{1}{2}}$$

$$[d] \sin(-\theta) = -\sin \theta \textcircled{\frac{1}{2}} = -y = \frac{2\sqrt{10}}{11} \textcircled{\frac{1}{2}}$$

$$[e] \sec(-\theta) = \sec \theta \textcircled{1} = \frac{1}{x} = \frac{1}{-\frac{9}{11}} \textcircled{1} = -\frac{11}{9} \textcircled{\frac{1}{2}}$$

[6] [a] $\left| \frac{5}{6}\pi \right|$ COTERMINAL WITH $\left| \frac{5}{6}\pi \right.$ OR $\left. \frac{11\pi}{6} \right|$

[b]

$$\begin{array}{r} 360 \overline{) 910} \\ \underline{720} \\ 190 \end{array}$$

$$-190^\circ + 360^\circ = 170^\circ$$

OR $\left| -910^\circ + 3(360^\circ) \right| = -910^\circ + 1080^\circ = 170^\circ$

[c] $\left| \cos \frac{7\pi}{6} \right| = \left| \cos \frac{11\pi}{6} \right| = x = \left| \frac{\sqrt{3}}{2} \right|$

$$[7] [a] A = \frac{1}{2} r^2 \theta$$

$$\theta = \frac{2A}{r^2} = \frac{2(24 \text{ cm}^2)}{(8 \text{ cm})^2} = \frac{48 \text{ cm}^2}{64 \text{ cm}^2} = \frac{3}{4} \text{ RADIANS} \quad (1)$$

$$[b] s = r\theta = (8 \text{ cm}) \left(\frac{3}{4} \text{ RADIANS} \right) = 6 \text{ cm} \quad (1)$$

$$[c] v = r\omega$$

$$\omega = \frac{v}{r} = \frac{45 \text{ cm/hr}}{8 \text{ cm}} = \frac{45}{8} \text{ RADIANS/HOUR} \quad (1)$$