

1. (a) $\frac{7\pi}{6}$
(b) 5π
(c) $\frac{\pi}{20}$
2. (a) 720
(b) 67.5
(c) 75
3.
 - $\sin \frac{3\pi}{4} = \frac{\sqrt{2}}{2}$
 - $\cos \frac{3\pi}{4} = -\frac{\sqrt{2}}{2}$
 - $\tan \frac{3\pi}{4} = -1$
 - $\csc \frac{3\pi}{4} = \frac{2}{\sqrt{2}}$
 - $\sec \frac{3\pi}{4} = -\frac{2}{\sqrt{2}}$
 - $\cot \frac{3\pi}{4} = -1$
4.
 - $\sin \frac{5\pi}{6} = \frac{1}{2}$
 - $\cos \frac{5\pi}{6} = -\frac{\sqrt{3}}{2}$
 - $\tan \frac{5\pi}{6} = -\frac{\sqrt{3}}{3}$
 - $\csc \frac{5\pi}{6} = 2$
 - $\sec \frac{5\pi}{6} = -\frac{2}{\sqrt{3}}$
 - $\cot \frac{5\pi}{6} = -\frac{3}{\sqrt{3}}$
5.
 - $\sin \frac{4\pi}{3} = -\frac{\sqrt{3}}{2}$
 - $\cos \frac{4\pi}{3} = -\frac{1}{2}$
 - $\tan \frac{4\pi}{3} = \sqrt{3}$
 - $\csc \frac{4\pi}{3} = -\frac{2}{\sqrt{3}}$
 - $\sec \frac{4\pi}{3} = -2$
 - $\cot \frac{4\pi}{3} = \frac{1}{\sqrt{3}}$

$$\begin{aligned}
 6. \quad & \bullet \sin x = \frac{3}{5} \\
 & \bullet \cos x = \frac{4}{5} \\
 & \bullet \tan x = \frac{3}{4} \\
 & \bullet \csc x = \frac{5}{3} \\
 & \bullet \sec x = \frac{5}{4} \\
 & \bullet \cot x = \frac{4}{3}
 \end{aligned}$$

$$\begin{aligned}
 7. \quad & \bullet \sin x = \frac{\sqrt{5}}{3} \\
 & \bullet \cos x = -\frac{2}{3} \\
 & \bullet \tan x = -\frac{\sqrt{5}}{2} \\
 & \bullet \csc x = \frac{3}{\sqrt{5}} \\
 & \bullet \sec x = -\frac{3}{2} \\
 & \bullet \cot x = -\frac{2}{\sqrt{5}}
 \end{aligned}$$

$$8. \sin 35^\circ = \frac{x}{10} \longrightarrow x \approx 5.736$$