11. Find all degree solutions for θ.

$\csc(4\theta) = 1$

arg = 4θ, but there is no solving interval for this; we use $+ 360°k$, instead.

$\csc(\text{arg}) = 1$

$\text{arg} = 90° + 360°k$

$4\theta = 90° + 360°k$

Divide each side by 4

$\theta = 22.5° + 90°k, \quad k \in J$

12. Find all radian solutions for x.

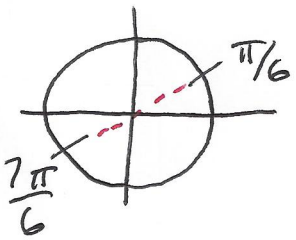
$\sqrt{3}\cot(3x) - 1 = 0$

arg = $3x$

$\sqrt{3}\cot(\text{arg}) - 1 = 0$

$\cot(\text{arg}) = \frac{1}{\sqrt{3}}$

$\cot(\text{arg}) = \frac{\sqrt{3}}{3}$



Because $\pi/6$ and $\frac{7\pi}{6}$ are diametrically opposed (on the same diameter) they differ by 180°, or π. So, we add πk to the QI value, not $2\pi k$.

$\text{arg} = \frac{\pi}{6} + \pi k$

$3x = \frac{\pi}{6} + \pi k$

multiply each side by $\frac{1}{3}$

$x = \frac{\pi}{18} + \frac{\pi k}{3}, \quad k \in J$