On a scientific calculator, first divide 1 by 7, then press the 2nd key and COS. Do this in the reverse order for a graphing calculator.

$$\cos^{-1}\left(\frac{1}{7}\right) = \cos^{-1}0.\overline{142857} = 81.7867893\ldots^\circ$$

$$\approx 81.79^\circ$$