1. Find the exact value of the following without a calculator:
   a) $\tan\left(\frac{11\pi}{3}\right)$

   \[ \tan\left(\frac{11\pi}{3}\right) = \tan\left(\frac{\pi}{3}\right) = -\sqrt{3} \]

   \[ \frac{\sqrt{3}}{2} \quad \frac{1}{2} \quad 2\pi/3 \]
   \[ \frac{-\sqrt{3}}{2} \quad \text{(reference angle is } \pi/3 \text{)} \]

   b) $\csc(-315^\circ)$

   \[ \csc(-315^\circ) = \csc(360^\circ - 315^\circ) = \csc(45^\circ) = \frac{1}{\sin(45^\circ)} = \sqrt{2} \]

2. If $\csc \theta = 3$ and $\cot \theta < 0$, then find the exact value of the other five trigonometric functions of $\theta$.

   \[ \sin \theta = \frac{1}{3} \quad \cos \theta = \cot \theta < 0 \quad \sin \theta < 0, \text{ so in Quadrant II} \]

   \[ \sin \theta = \frac{1}{3} \quad \cos \theta = -\frac{\sqrt{2}}{3} \]

   \[ \cot \theta = -2\sqrt{2} \quad \csc \theta = -\frac{3}{\sqrt{2}} = -\frac{3\sqrt{2}}{2} \]

3. Let $y = \frac{4}{3} \cos(-\frac{1}{3}x)$.
   a) Find the amplitude.
   b) Find the period.
   c) Sketch the graph.

   a) Amplitude $y = \left| \frac{4}{3} \right| = \frac{4}{3}$

   b) Period $\frac{2\pi}{1/3} = 6\pi$

   (Since cosine is an even function)

   \[ \frac{1}{4} \cdot \text{Period in } \frac{6\pi}{4} = \frac{3\pi}{2} \]