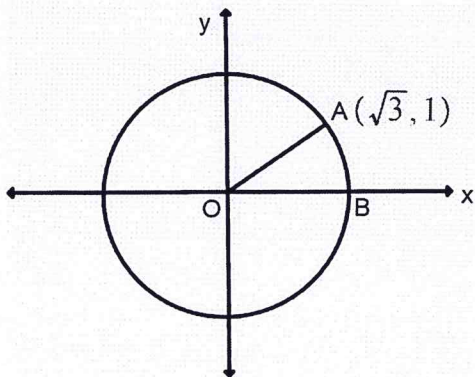


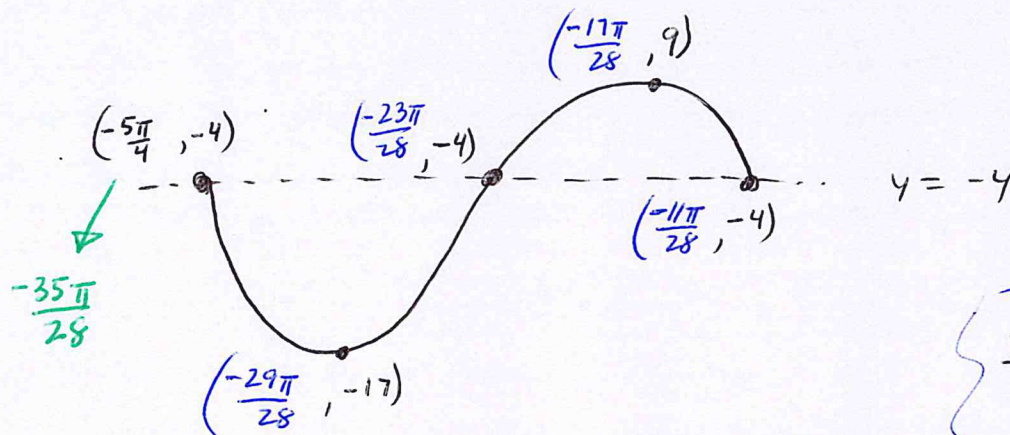
1. Sketch one period of this Sine Function: $y = -13\sin\left(\frac{7}{3}\left(x + \frac{5\pi}{4}\right)\right) - 4$

2. In the xy -plane below, O is the center of the circle and the measure of $\angle AOB$ is $\frac{\pi}{a}$ radians. What is the value of a ?



1. Sketch one period of this Sine Function: $y = -13\sin\left(\frac{7}{3}\left(x + \frac{5\pi}{4}\right)\right) - 4$

- upside down • Amplitude = 13 • Period = $\frac{2\pi}{\frac{7}{3}} = 2\pi \cdot \frac{3}{7} = \frac{6\pi}{7}$
- phase shift: $\frac{5\pi}{4}$ Left • midline: $y = -4$

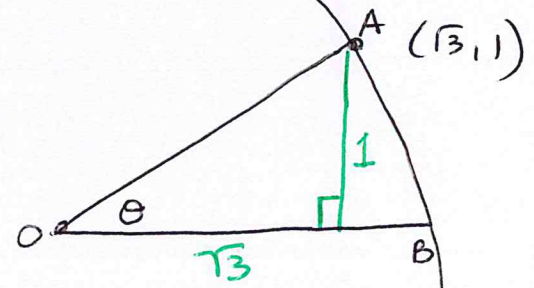
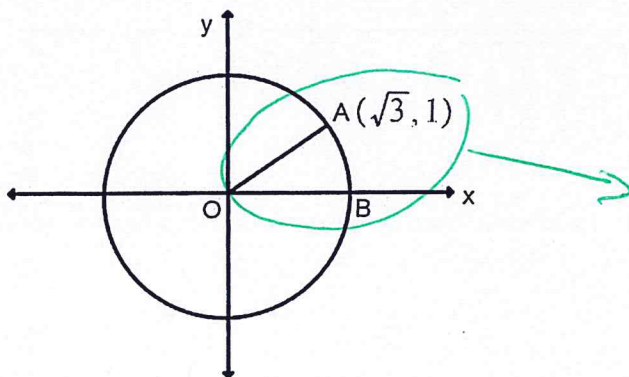


$\frac{1}{4}$ of a period:

$$\frac{6\pi}{7} \cdot \frac{1}{4} = \frac{3\pi}{14}$$

$\swarrow \frac{6\pi}{28}$

2. In the xy-plane below, O is the center of the circle and the measure of $\angle AOB$ is $\frac{\pi}{a}$ radians. What is the value of a ?



$$\tan \theta = \frac{1}{\sqrt{3}}$$

$$\theta = \tan^{-1}\left(\frac{1}{\sqrt{3}}\right) = 30^\circ$$

$$30^\circ \cdot \frac{\pi}{180^\circ} = \frac{\pi}{6}$$

$$\angle AOB = \frac{\pi}{6} = \frac{\pi}{a}$$

$$a = 6$$