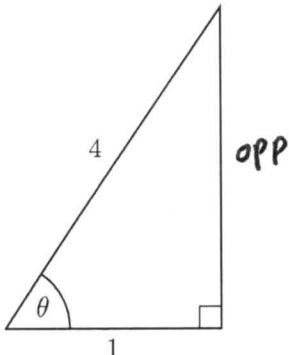


Name: Key

Section: _____

You have 15 minutes to complete the quiz. Please show all work, and then write your answer on the line provided.

1. (4 points) Find the value of the three ~~trigonometric~~ ^{specified} trigonometric functions of the angle θ .



$$\begin{aligned} opp^2 + 1^2 &= 4^2 \\ opp^2 &= 16 - 1 = 15 \\ opp &= \sqrt{15} \end{aligned}$$

$$\sin(\theta) = \frac{opp}{hyp} = \frac{\sqrt{15}}{4}$$

$$\cos(\theta) = \frac{adj}{hyp} = \frac{1}{4}$$

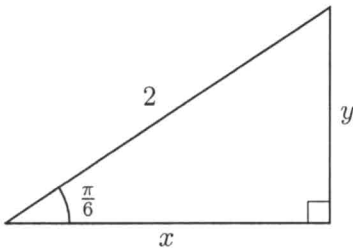
$$\tan(\theta) = \frac{opp}{adj} = \frac{\sqrt{15}}{1} = \sqrt{15}$$

$$\sin(\theta) = \frac{\sqrt{15}}{4}$$

$$\cos(\theta) = \frac{1}{4}$$

$$\tan(\theta) = \sqrt{15}$$

2. (2 points) Find the lengths of the missing sides of the triangle.



$$\sin\left(\frac{\pi}{6}\right) = \frac{opp}{hyp} = \frac{y}{2}$$

and

$$\sin\left(\frac{\pi}{6}\right) = \frac{1}{2}$$

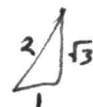
$$\text{so } \frac{1}{2} = \frac{y}{2} \Rightarrow y = 1$$

$$\cos\left(\frac{\pi}{6}\right) = \frac{adj}{hyp} = \frac{x}{2}$$

and

$$\cos\left(\frac{\pi}{6}\right) = \frac{\sqrt{3}}{2} \Rightarrow \frac{\sqrt{3}}{2} = \frac{x}{2}$$

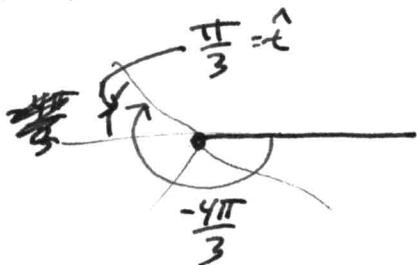
$$\Rightarrow x = \sqrt{3}$$



Name: _____

Section: _____

3. (2 points) Find the reference number for the angle $t = -\frac{4\pi}{3}$. Then find $\cos(t)$.



$$\cos(\hat{t}) = \cos\left(\frac{\pi}{3}\right) = \frac{1}{2}$$

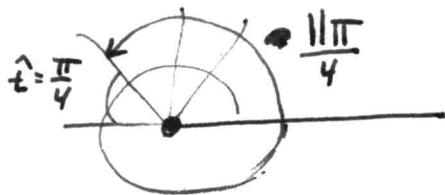
and x -coordinate is negative

$$\Rightarrow \cos\left(-\frac{4\pi}{3}\right) = -\frac{1}{2}$$

Reference angle: $\frac{\pi}{3}$

$\cos(t) = -\frac{1}{2}$

4. (2 points) Find the reference number for the angle $t = \frac{11\pi}{4}$. Then find $\sin(t)$.



$$\frac{11\pi}{4} = \frac{8\pi}{4} + \frac{3\pi}{4}$$

$$= 2\pi + \frac{3\pi}{4}$$

$$\sin(\hat{t}) = \sin\left(\frac{\pi}{4}\right) = \frac{\sqrt{2}}{2}$$

y -coordinate is positive $\Rightarrow \sin\left(\frac{11\pi}{4}\right) = \frac{\sqrt{2}}{2}$

Reference angle: $\frac{\pi}{4}$

$\sin(t) = \frac{\sqrt{2}}{2}$