

Bellwork Wednesday, February 28, 2018

1. You are on the ground and see your kite caught in a tree with an angle of elevation of 49° . If you are 80 feet from the tree how high in the tree is the kite? Round to the nearest hundredth.

2. A building needs to add a wheel chair ramp to the front door to give handicapped people access. The front door is 3 feet above the level of the parking lot and the ramp is to make a 5° angle with the ground. If you want to make the ramp out of a single piece of wood find the length of the piece of wood needed to the nearest tenth of a foot.

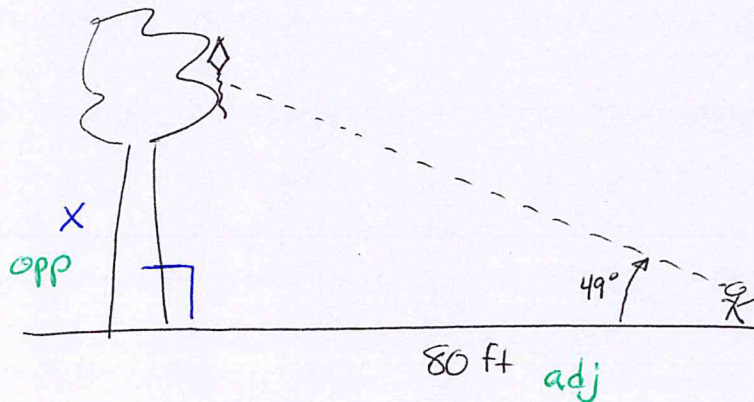
3. Find the exact value of each.

a) $\tan(-1560^\circ)$

b) $\sin \frac{95\pi}{6}$

c) $\cos \frac{-59\pi}{4}$

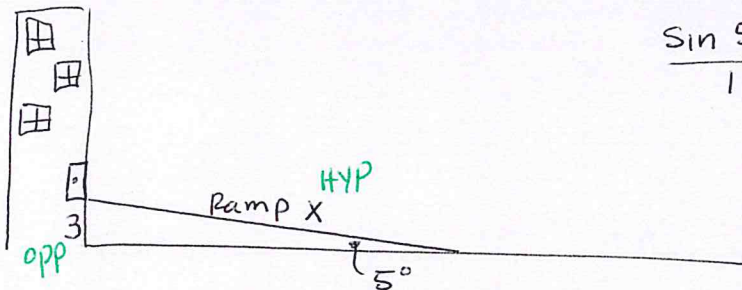
1. You are on the ground and see your kite caught in a tree with an angle of elevation of 49° . If you are 80 feet from the tree how high in the tree is the kite? Round to the nearest hundredth.



$$\tan 49^\circ = \frac{x}{80}$$

$$\text{height} = x = 92.03 \text{ ft}$$

2. A building needs to add a wheel chair ramp to the front door to give handicapped people access. The front door is 3 feet above the level of the parking lot and the ramp is to make a 5° angle with the ground. If you want to make the ramp out of a single piece of wood find the length of the piece of wood needed to the nearest tenth of a foot.



$$\frac{\sin 5^\circ}{1} = \frac{3}{x}$$

$$\text{Ramp} = x = 34.4 \text{ ft}$$

3. Find the exact value of each.

a) $\tan(-1560^\circ)$

-1560° is coterminal with 240°

$$\tan(-1560^\circ) = \tan(240^\circ)$$

$$= \frac{-\frac{\sqrt{3}}{2}}{-\frac{1}{2}}$$

$$= \sqrt{3}$$

b) $\sin \frac{95\pi}{6}$

$\frac{95\pi}{6}$ is coterminal with $\frac{11\pi}{6}$

$$\sin \frac{95\pi}{6} = \sin \frac{11\pi}{6} = -\frac{1}{2}$$

c) $\cos \frac{-59\pi}{4}$

$-\frac{59\pi}{4}$ is coterminal with $\frac{5\pi}{4}$

$$\cos \frac{-59\pi}{4} = \cos \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$$