

Trig Practice Solution

1) $\sin(45^\circ) =$

$$\frac{\sqrt{2}}{2} \approx 0.707$$

2) $\cos\left(\frac{7\pi}{6}\right) =$

$$\frac{-\sqrt{3}}{2} \approx -0.866$$

3) Convert 192° into radians :

$$192^\circ \times \frac{\pi \text{ rad}}{180^\circ} = \frac{16\pi}{15} \approx 1.067\pi$$

4) Convert $\frac{7}{9}\pi$ into degrees:

$$\frac{7\pi}{9} \times \frac{180^\circ}{\pi \text{ rad}} = 140^\circ$$

5) In which quadrant is sine positive, and tangent negative?

Quadrant II

6) Is there a quadrant where sine, cosine, and tangent are all negative?

No

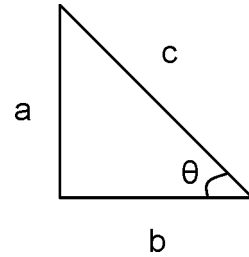
7) If $c = 5$, and $\theta = 30^\circ$, $a = ?$

$$\sin 30^\circ = \frac{a}{c}, \text{ so } a = 5 \sin 30^\circ = 2.5$$

8) If $a = 7$, and $b^2 = 576$, $c = ?$

$$a^2 + b^2 = c^2, \text{ so } 7^2 + 576 = c^2 = 625$$

$$c = 25$$



9) $y = 10 + 3\cos(\pi t + \pi/3)$

a. What is the amplitude?

3

b. What is the maximum value of y ?

13

c. What is the period?

2 sec

10) Simplify:

a. $\sin \theta \csc \theta = \sin \theta \frac{1}{\sin \theta} = 1$

b. $\cos^{-1} \cos \theta = \theta$

c. $\sin^2 \theta + \cos^2 \theta + \sec^2 \theta - \tan^2 \theta = 1 + 1 = 2$

d. $\frac{2\sin \theta \cos \theta}{\cos^2 \theta - \sin^2 \theta} = \frac{\sin 2\theta}{\cos 2\theta} = \tan 2\theta$