

TRIGONOMETRY 1 REVIEW ASSIGNMENT

1. Perform the indicated conversions from degrees to radians. All answers should be EXACT.

(a) $230^\circ =$ _____ (radians)

(b) $725^\circ =$ _____ (radians)

2. Perform the indicated conversions from radians to degrees.

(a) $\frac{5\pi}{7} =$ _____ $^\circ$

(b) 1.8 radians = _____ $^\circ$

3. An arc has a radius of 3.2 m and an arc length of 15 m. Find the angle of the arc, to the nearest degree.

4. A sector of a circle of radius 5 cm has an angle of 115° . Find the area of the sector, to the nearest tenth if a square cm.

5. Write an expression for all of the angles conterminal with each angle. Indicate what your variable represents.

a) 250°

b) $\frac{5\pi}{2}$

6. $P(\theta) = (x, y)$ is the point where the terminal arm of an angle θ intersects the unit circle. What are the coordinates for each point?

a) $P(\theta) = \frac{5\pi}{6}$

b) $P(\theta) = -\frac{11\pi}{2}$

c) 45°

7. Identify all measures for θ in the interval $-2\pi \leq \theta \leq 2\pi$ such that $P(\theta)$ is the given point.

a) $(\frac{\sqrt{3}}{2}, -\frac{1}{2})$

b) $(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$

c) $(0, -1)$

8. If $\tan x = \frac{a}{b}$, where both a and b are positive numbers, and $\cos x > 0$, find the value of $\csc x$ exactly, in terms of a and b .

9. Find the reference angle for:

(a) -1020°

(b) $\frac{15\pi}{4}$

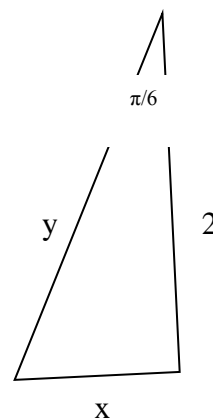
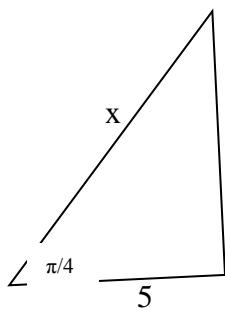
10. Find each value to the nearest hundredth.

(a) $\csc(100^\circ)$

(b) $\cot\left(\frac{3\pi}{7}\right)$

(c) $\sec(-781^\circ)$

11. Find the exact value of the missing sides of each triangle:



12. Find the exact value of the following trig ratios:

(a) $\sin \frac{\pi}{12}$

(b) $\sin \frac{-\pi}{3}$

(c) $\cos \frac{13\pi}{3}$

(d) $\sec \frac{-\pi}{4}$

(e) $\tan \frac{-2\pi}{3}$

(f) $\cot \frac{7\pi}{4}$

(g) $\csc \frac{23\pi}{6}$

(h) $\cos \frac{-5\pi}{6}$

13. Solve for x exactly, where $0 \leq x < 2\pi$.

(a) $\cos x = \frac{\sqrt{3}}{2}$

(b) $\sin x = \frac{-\sqrt{2}}{2}$

(c) $\tan x = -\sqrt{3}$

(d) $\csc x = 2$

(e) $\cot x = -1$

(f) $\sec x = -\sqrt{2}$

14. Determine the approximate measure of all angles that satisfy the following. Give answers to the nearest hundredth of a unit.

a) $\cos \theta = -0.77, -2\pi \leq \theta \leq 2\pi$

b) $\csc \theta = 9.5, -270^\circ \leq \theta \leq 90^\circ$

15. Solve for θ exactly where possible, otherwise solve θ to two decimal places, where $0 < \theta < 2\pi$.

(a) $8\sin^2 \theta - 6\sin \theta + 1 = 0$

(b) $3\cos^2 \theta = 4\cos \theta + 4$

(c) $2\cos^2 \theta - \cos \theta = 0$

(d) $3\tan^2 x - \tan x = 2$