

Unit 6: Standard Position Trigonometry**6.4 Solving Trigonometric Equations I**

Trigonometric Equation:

An equation involving a trig ratio with an unknown angle (which we solve for)

ex. Solve to the nearest tenth of a degree. $0 \leq \theta < 360^\circ$

a) $\sin \theta = 0.7562$

Solution Steps (show your work!)

1. Identify your quadrants & sketch
2. Determine your reference angle
3. Determine the solutions

b) $\cos \theta = -0.2491$

c) $\tan \theta = -\frac{5}{3}$

Watch the given restriction on the angle!

ex. Solve to the nearest degree. $90^\circ < \theta < 270^\circ$

a) $\sin \theta = -\frac{2}{7}$

b) $\cos \theta = 0.5667$

Sometimes we need to isolate the trigonometric ratio before we can solve.

ex. Solve to the nearest degree. $0 \leq \theta < 360^\circ$

a) $5 \tan \theta + 1 = 4$

b) $10 \sin \theta + 5 = 4 \sin \theta$

c) $3(2 \cos \theta - 1) + 5 = 3 \cos \theta + 7$



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