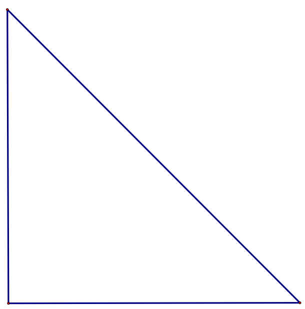
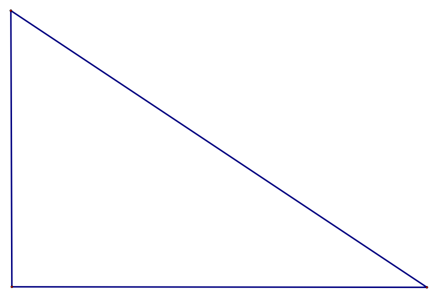
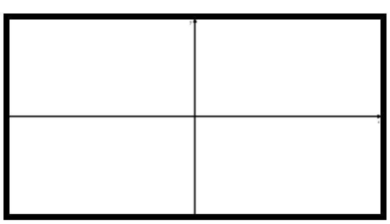
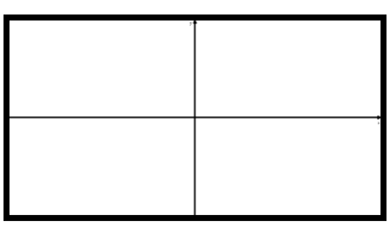
(A) ***Lesson Objectives***

a. Review the 2 special triangles and the exact trig ratios of special angles 30°, 45°, & 60°.
b. Solve linear trig equations wherein the solution is one of the "special angles"
c. Solve linear trig equations wherein the solution is one of the quadrantal angles
d. Solve linear trig equations wherein the solution is one of the "special angles"
e. Use a multi-representational approach to solving equations

(B) ***Review of Special Triangles & Angles & Their Trig Ratios***

45° - 45° - 90° Triangle	30° - 60° - 90° triangle	
		
sin(45°) = cos(45°) = tan(45°) =	sin(30°) = cos(30°) = tan(30°) =	sin(60°) = cos(60°) = tan(60°) =

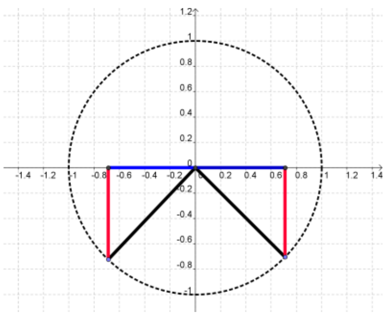
(C) ***Review of Quadrantal Angles & Their Trig Ratios***

	0	90	180	270	360
sin(θ) 					
cos(θ) 					

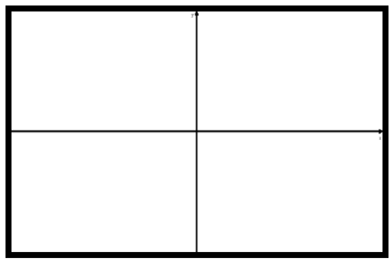
(D) Solving Linear Trigonometric Equations – Special Angles – Example #1

Solve the equation $\sin(\theta) = -\frac{1}{\sqrt{2}}$ for $-180° \le \theta \le 360°$

Triangle/unit circle visual approach



Graphic approach



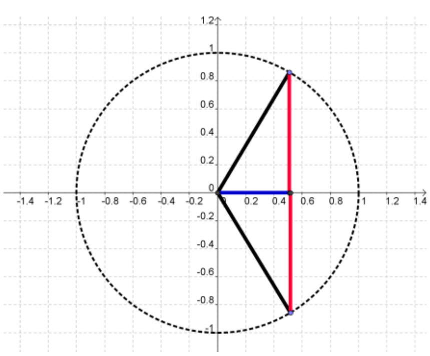
Analytical approach

Alternate "forms" of the equation:

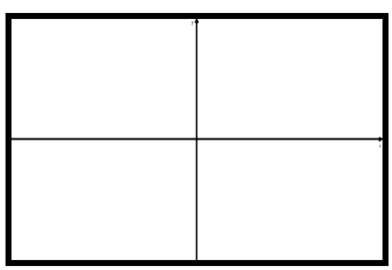
(E) Solving Linear Trigonometric Equations – Special Angles – Example #2

Solve the equation $\cos(\theta) = \frac{1}{2}$ for $-90° \le \theta \le 540°$

Triangle/unit circle visual approach



Graphic approach

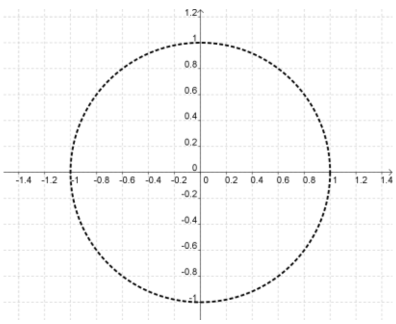
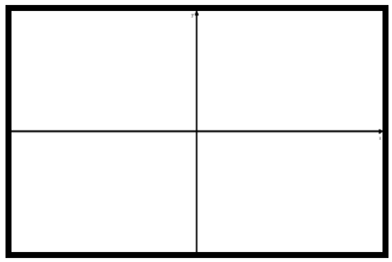


Analytical approach

Alternate "forms" of the equation:

Solving Linear Trigonometric Equations – Quadrantal Angles – Example #1

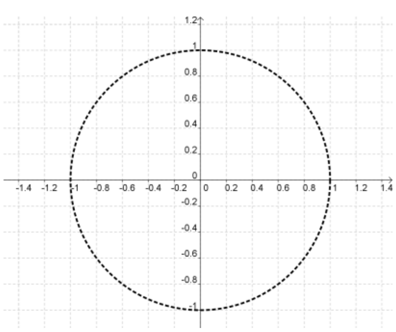
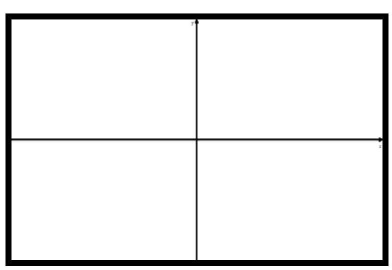
Solve the equation $\sin(\theta) = 1$ for $-180° \le \theta \le 360°$

Triangle/unit circle visual approach	Graphic approach	Analytical approach
		

Alternate "forms" of the equation:

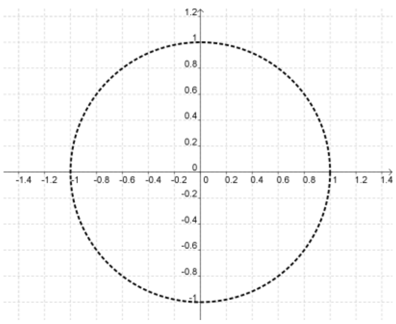
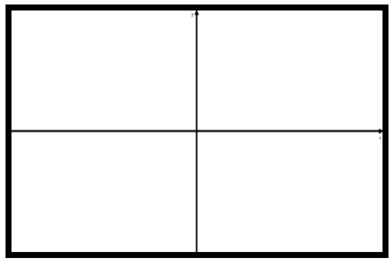
(F) Solving Linear Trigonometric Equations – Quadrantal Angles – Example #2

Solve the equation $\cos(\theta) = -1$ for $-360° \le \theta \le 360°$

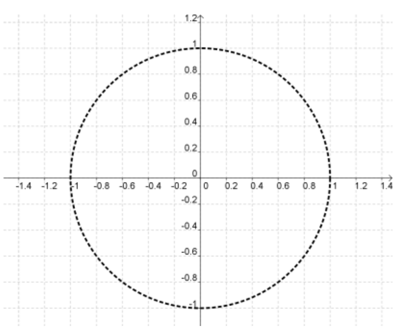
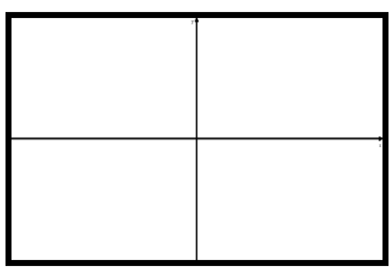
Triangle/unit circle visual approach	Graphic approach	Analytical approach
		

Alternate "forms" of the equation:

(G) Solving Linear Trigonometric Equations – Any Angle – Example #1

Solve the equation $\sin(\theta) = -0.4325$ on the domain $-180° \leq \theta \leq 360°$		
Triangle/unit circle visual approach 	Graphic approach 	Analytical approach
Alternate "forms" of the equation:		

(H) Solving Linear Trigonometric Equations – Special Angles – Example #2

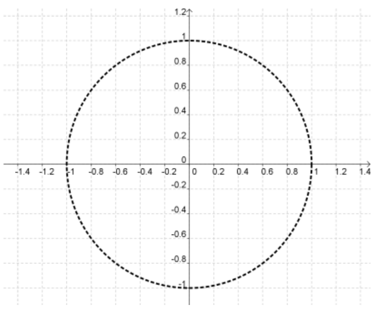
Solve the equation $\cos(\theta) = \frac{3}{16}$ on the domain $-270° \leq \theta \leq 180°$		
Triangle/unit circle visual approach 	Graphic approach 	Analytical approach
Alternate "forms" of the equation:		

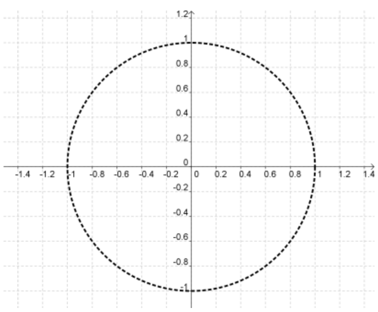
Lesson 42 – Solving Linear Trig Equations Date:

(I) Solving Linear Trigonometric Equations – Combinations – Example #1

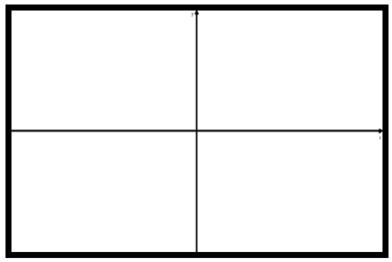
Solve the equation $(\sin\theta - 1)(2\cos\theta + 1) = 0$ on the domain $-180° \le \theta \le 360°$

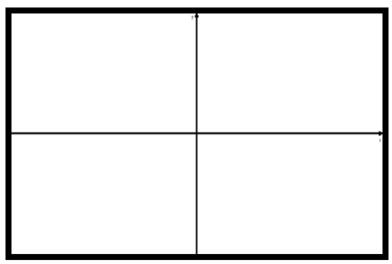
Triangle/unit circle visual approach





Graphic approach



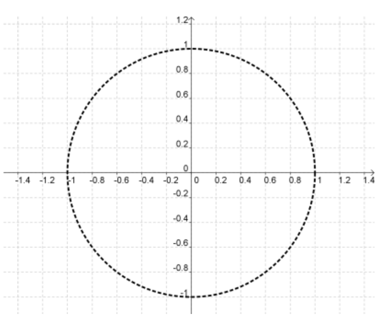


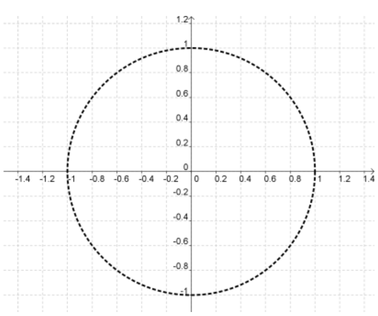
Analytical approach

(J) Solving Linear Trigonometric Equations – Combinations – Example #2

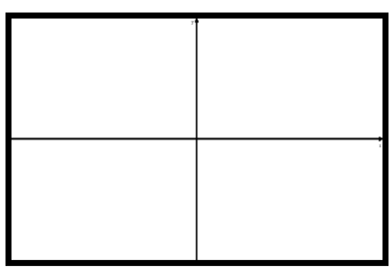
Solve the equation $(\tan\theta)(\sqrt{3}\sin\theta - 2) = 0$ on the domain $-180° \le \theta \le 360°$

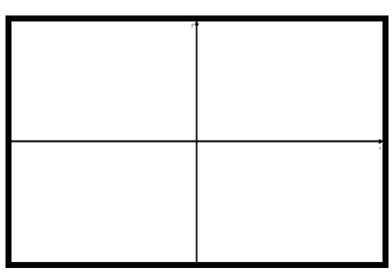
Triangle/unit circle visual approach





Graphic approach





Analytical approach

Additional Notes: