

SOLVING TRIG EQUATIONS

14 APRIL 2014



Lesson Description

In this lesson we:

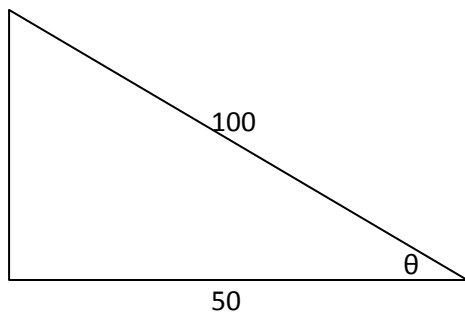
- Solve Trig equations
- Discuss special angles



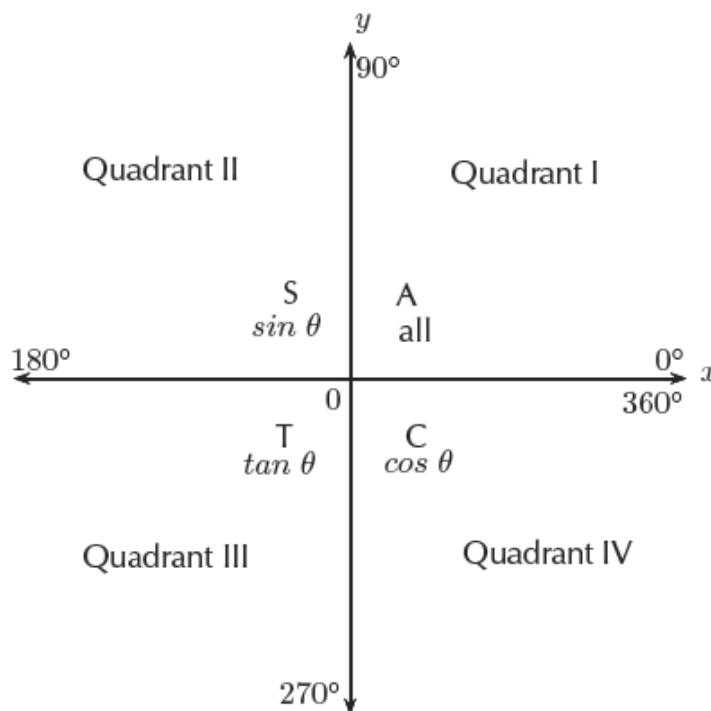
Summary

Example 1

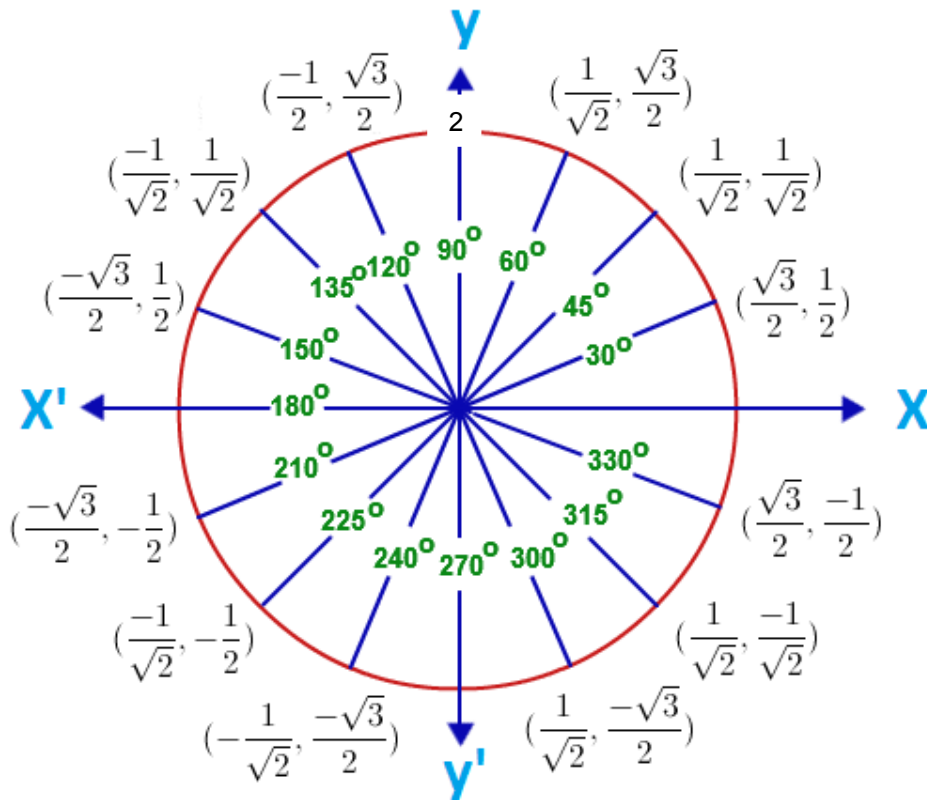
Find the value of θ in the following right angled triangle:



Cast Diagram-The Cartesian Plane



Special Angles



Test Yourself

Question 1

Without using a calculator determine if the following are positive or negative:

- a.) $\cos 315$
- b.) $\tan 115$

Question 2

In which quadrant will x lie if:

- a.) $\sin x > 0$ and $\tan x < 0$
- b.) $\tan x > 0$ and $\cos x < 0$
- c.) $\tan x < 0$ and $180^\circ < x < 360^\circ$
- d.) $\cos x > 0$ and $\sin x < 0$

Question 3

$\cos^2 45 + \sin^2 45 =$

- A 0.76
- B 1.14
- C 1
- D -1

Question 4

$$\cos^2 60 + \tan^2 60 + \cos 0 =$$

- A 4
B 0.5
C $\frac{17}{4}$
D 1

**Improve your Skills****Question 1**

Solve for θ correct to one decimal place:

- a.) $2\sin\theta = 0.2$
b.) $\sin 2\theta = 0.4$
c.) $2\sin 3\theta + 1 = 2.6$

Question 2

Without using a calculator determine the value of

$$\sin 60^\circ \cos 30^\circ - \cos 60^\circ \sin 30^\circ + \tan 45^\circ$$

Question 3

Without using a calculator find:

- a.) $4 \cos^2 30 + 8 \cos^2 45$
b.) $\frac{\sin^2 60 \cos^2 45}{\sin 90}$