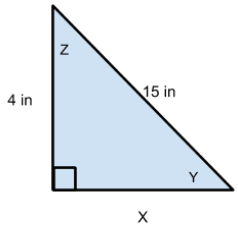
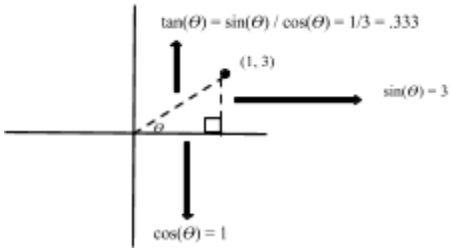
# Trigonometry Basics1




There are two ways to do this:

- You can use the pythagorean theorem to find X then find the rest with inverse trig
  - $4^2 + X^2 = 15^2$
  - $X^2 = 225 - 16$
  - $\sqrt{X^2} = \sqrt{209} \approx 14.46 = X$
  - sin(y) = $\frac{4}{15} \approx .267$
  - $sin^{-1}(.267) \approx 15.47^\circ$ = Y
  - $180^\circ - 90^\circ - 15.47^\circ \approx 74.53^\circ$ = Z
- Or you can use inverse trig to find Y or Z then use regular trig to find X.
  - $cos^{-1}(\frac{4}{15}) \approx 74.53^\circ$ = Z
  - $90^\circ - 74.53^\circ = 15.47^\circ$ = Y
  - $cos(15.47) = \frac{X}{15}$
  - $15 \bullet cos(15.47) \approx 14.46in = X$






When using Trig to solve a right triangle on a coordinate plane:

- X coordinate = sin($\Theta$)
- Y coordinate = cos($\Theta$)
- tan($\Theta$) = sin($\Theta$) ÷ cos($\Theta$)