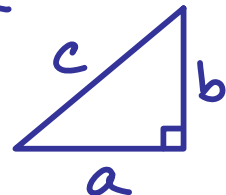# Calculus C - WarmUp - 7.3

Pythagorean Theorem : $a^2 + b^2 = c^2$
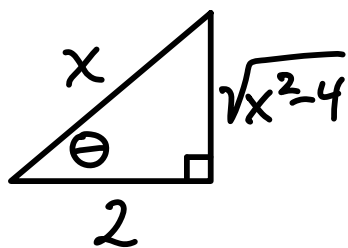

Given $\sqrt{a^2 \pm u^2}$ set up a right triangle illustrating the pythagorean relationship and write x in terms of θ. Hint: If x is not the hypotenuse, put it opposite θ.
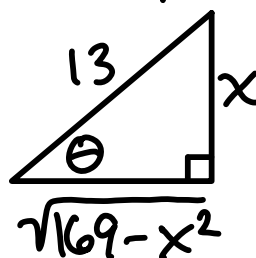
Don't forget: Soh Cah Toa

↳ csc = ho ↳ sec = ha cot = ao

Example: $\sqrt{x^2 - 4}$

$\dfrac{x}{2} = \sec\theta$

$x = 2\sec\theta$

Example: $\sqrt{169 - x^2}$

$\dfrac{x}{13} = \sin\theta$

$x = 13\sin\theta$

① $\sqrt{x^2 - 36}$ ② $\sqrt{16 + x^2}$ ③ $\sqrt{4x^2 + 25}$

④ $\sqrt{1 - x^2}$ ⑤ $\sqrt{9x^2 - 3}$ ⑥ $\sqrt{5 - e^{2x}}$