

Welcome!

Please place all cell phones in holder and  
go to board for warm-up

# Solve by Factoring

**Zero Product Property:** if  $(a)(b)=0$  then either  $a=0$ ,  $b=0$ , or both equal zero.

When: You have an equation (=)

How:

1. Set the equation equal to 0
2. Factor the polynomial
3. Set each factor =0
4. Solve each equation

$x^2 - 14x = 0$ $x(x-14) = 0$ $x = 0 \quad x - 14 = 0$ $\begin{array}{r} \downarrow \\ \hline x = 0 \quad x = 14 \end{array}$	$5x^2 - 30x - 35 = 0$ $5(x^2 - 6x - 7) = 0$ $5(x-7)(x+1) = 0$ <del><math>5 = 0</math></del> $x - 7 = 0 \quad x + 1 = 0$ $x = 7 \quad x = -1$	$6x^2 - 13x = 15$ $6x^2 - 13x - 15 = 0$ $(1x - 3)(6x + 5) = 0$ $\begin{array}{r} \phantom{1x} - 18x \\ + 5x \\ \hline \phantom{1x} - 13x \end{array}$ $x - 3 = 0 \quad 6x + 5 = 0$ $x = 3 \quad \begin{array}{r} -5 \\ -5 \end{array}$ $\frac{6x = -5}{6} \quad \frac{-5}{6}$ $x = 3 \quad x = -\frac{5}{6}$
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$$\begin{array}{c} \text{6x} \\ \text{-----} \\ (2x \quad \overset{3}{5})(3x \quad \overset{5}{3}) \\ \quad \quad \quad \underbrace{\quad \quad} \\ \quad \quad \quad 15 \\ (4x \quad 3)(x \quad 5) \end{array}$$