

Solve by factoring:

1) Factor using:

- GCF
- Slide, divide, and bottom up method
- mixed of both method.

2) Solving:

- Set your equation equal to Zero $(Y=0)$
- Use Zero product property to solve

Examples:

Solve each quadratic equation using factoring:

1) $x^2 - 3x + 2 = 0$
 $(x-2)(x-1) = 0$
 $x-2=0$ $\boxed{x=2}$
 $x-1=0$ $\boxed{x=1}$

~~$\begin{array}{r} 2 \\ -2 \\ -3 \end{array}$~~

2) $6x^2 - 16x + 8 = 0$
 $2(3x^2 - 8x + 4) = 0$
 $2(x^2 - 8x + 12) = 0$
 $2(x-\frac{6}{3})(x-\frac{2}{3}) = 0$
 $2(x-2)(3x-2) = 0$ divide by 3
 $x-2=0$ $\boxed{x=2}$
 $3x-2=0$ $\boxed{x=\frac{2}{3}}$

~~$\begin{array}{r} 12 \\ -6 \\ -8 \end{array}$~~

3) $9x^2 - 1 = 0$ $b=0$
 $x^2 - 9 = 0$
 $(x-\frac{3}{9})(x+\frac{3}{9}) = 0$
 $(x-\frac{1}{3})(x+\frac{1}{3}) = 0$
 $(3x-1)(3x+1) = 0$
 $3x-1=0$ $\boxed{x=\frac{1}{3}}$
 $3x+1=0$ $\boxed{x=-\frac{1}{3}}$

~~$\begin{array}{r} -9 \\ -3 \\ 0 \end{array}$~~
 divide by 9

4) $x^2 = 30 + x$ $\boxed{x=2}$ $\boxed{x=-5}$
 $-x^2 - x - 30 = 0$
 $0 = (-x^2 - x - 30)$
 $(x+6)(x+5) = 0$
 $(x-6)(x+5) = 0$ $\boxed{x=6}$ $\boxed{x=-5}$

~~$\begin{array}{r} -30 \\ 6 \\ 1 \end{array}$~~
 $a=-1$