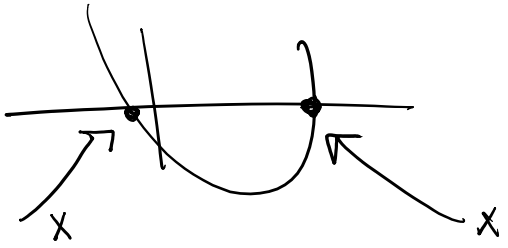
Solve by Factoring.

Friday, September 8, 2017 10:39 AM

- Solve by factoring
  - Find the Roots
  - Find the Zeros
  - find the x intercepts
  - Tell me where the parabola crosses the x-axis

All the Same.



Solve:

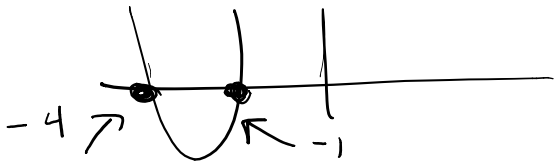
Factor → $x^2 + 5x + 4 = 0$

$(x+1)(x+4) = 0$

Zero Product Property

$x+1=0$ OR $x+4=0$

$x = -1$ $\quad$ $x = -4$



Factor $x^2 + 6x = 0$

$x(x+6) = 0$

$x = 0$ OR $x+6 = 0$

$x = -6$

Solve by factoring.

$x^2 - 25 = 0$

$(x+5)(x-5) = 0$

$x+5 = 0$ OR $x-5 = 0$

$x = -5$ $\qquad$ $x = 5$

Solve: $9x^2 - 5x - 3 = 0$ ↓ subtract

$$2x^2 - 5x - 3 = 0$$

$$[2x^2 - 6x] + [1x - 3]$$

6

$1 \cdot 6$ subtract

$2 \cdot 3$

$$2x(x-3) + 1(x-3)$$

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

Solve by factoring

$$x^2 + 6x + 8 = 0$$

8

$1 \cdot 8$

$2 \cdot 4$

$$(x+2)(x+4) = 0$$

$x + 2 = 0$ $\qquad$ $x + 4 = 0$

$x = -2$ $\qquad$ $x = -4$

$$x^2 - 3x + 2 = 12$$

polynomials $x^2 - 3x - 10 = 0$

factors $(x-5)(x+2)=0$ $\frac{10}{1\cdot 10}$ $2\cdot 5$

Roots: $x=5$, $x=-2$

Solve polynomial by factoring

$\Longrightarrow$ Roots ✓

Roots $\Longrightarrow$ polynomial.

I found 2 roots in the woods.

The roots are 6 and -2.

To which polynomial do these roots belong?

roots $\Longrightarrow$ factors $\Longrightarrow$ polynomial

$6 \Longrightarrow (x-6)$

$-2 \Longrightarrow (x+2)$ } factors

$(x-6)(x+2) =$

$x^2 - 6x + 2x - 12$

$f(x) = x^2 - 4x - 12$

root $\frac{1}{3} \Rightarrow \left(x - \frac{1}{3}\right)$

OR $3x - 1 = 0$

$3x = 1$

$x = \frac{1}{3}$