

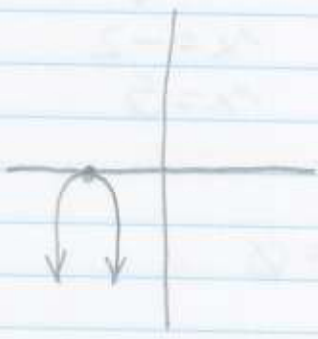
November 21st, 2007

Solving Quadratics

2 solⁿ



1 solⁿ

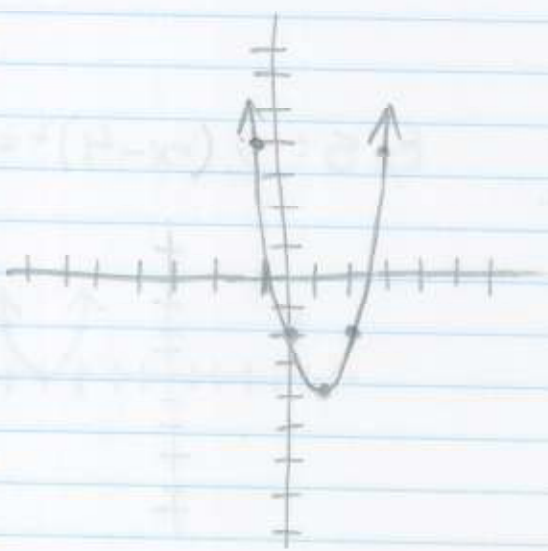


No Real solⁿ



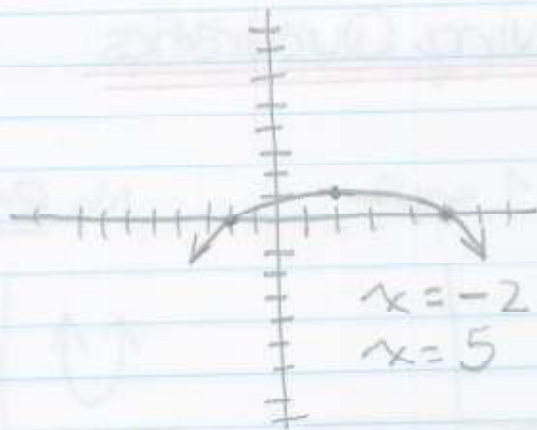
Solve by Graphing

Ex 1: $2(x-1)^2 - 4 = 0$

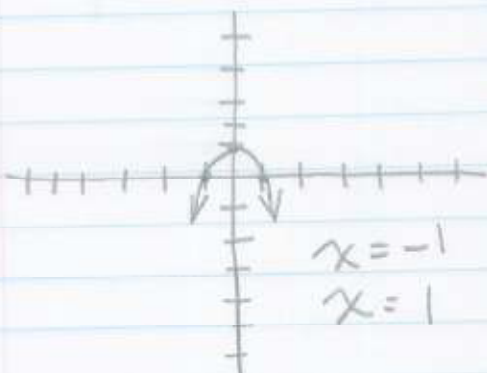


$x = -1$
 $x = 3$

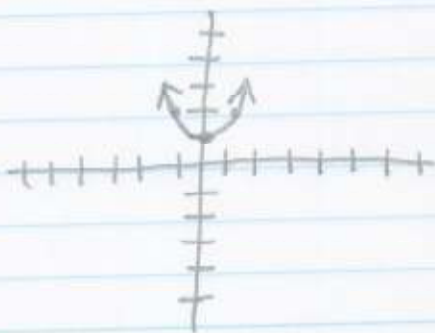
$$\text{Ex 2: } -\left(\frac{1}{3}(x-2)\right)^2 + 1 = 0$$



$$\text{Ex 3: } -x^2 + 1 = 0$$

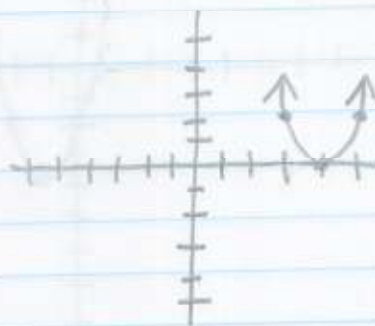


$$\text{Ex 4: } x^2 + 1 = 0$$



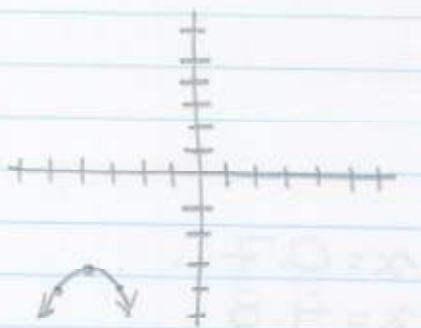
No Real Solⁿ

$$\text{Ex 5: } 2(x-4)^2 = 0$$



$x = 4$

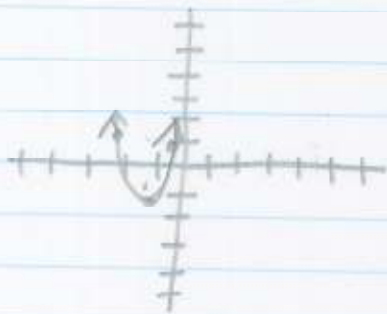
$$\text{Ex 6: } -\frac{1}{2}(x+4)^2 - 3$$



No Real Solⁿ

$$\text{Ex 7: } 2x^2 + 5x + 2 = 0$$

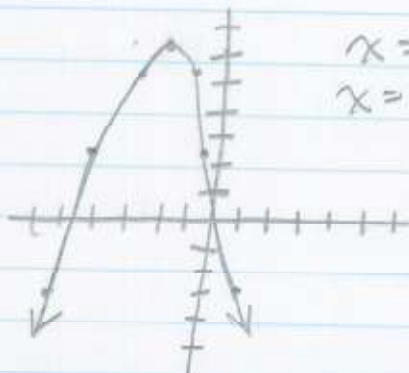
$$\begin{aligned} &= 2 \left(x^2 + \frac{5}{2}x \right) + 2 \\ &= 2 \left(x^2 + \frac{5}{2}x + \frac{25}{16} \right) + 2 - \frac{25}{8} \\ &= 2 \left(x + \frac{5}{4} \right)^2 - \frac{9}{8} \end{aligned}$$



$$\begin{aligned} x &= -0.5 \\ x &= -1.9 \end{aligned}$$

$$\text{Ex 8: } -x^2 - 5x = 0$$

$$\begin{aligned} &= -(x^2 + 5x) \\ &= -(x^2 + 5x + \frac{25}{4}) + \frac{25}{4} \\ &= -(x + \frac{5}{2})^2 + \frac{25}{4} \end{aligned}$$



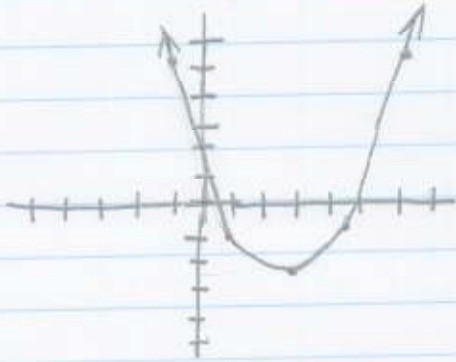
$$\begin{aligned} x &= -4,5 \\ x &= 0 \end{aligned}$$

$$\text{Ex 9: } \frac{1}{2}x^2 - 3x + 2 = 0$$

$$= \frac{1}{2}(x^2 - 6x + 9) + 2 - \frac{9}{2}$$

$$= \frac{1}{2}(x-3)^2 - \frac{5}{2}$$

$$= \frac{1}{2}(x-3)^2 - \frac{5}{2}$$



$$x = 0.7$$

$$x = 4.8$$

November 23, 2007

Solve by Factoring

① $x^2 - 16 = 0$

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

$x = -4, x = 4$

② $(2x+1)(3x-4) = 0$

$x = -\frac{1}{2}, x = \frac{4}{3}$

③ $x^2 + 9x + 18 = 0$

$x^2 + 10x = x - 18$

$x^2 + 9x + 18 = 0$

$(x+3)(x+6) = 0$

$x = -3, x = -6$

④ $2x^2 + 5x + 2 = 0$

$(2x+1)(x+2) = 0$

$x = -\frac{1}{2}, x = -2$

⑤ $6x^2 - 9x = 0$

$3x(2x-3) = 0$

$x = 0, x = \frac{3}{2}$

November 27, 2007

Solve using the Quadratic Formula

Ex 1: $3x^2 + 8x - 1 = 0$

$\begin{matrix} \uparrow & \uparrow & \uparrow \\ a & b & c \end{matrix}$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{-8 \pm \sqrt{(8)^2 - 4(3)(-1)}}{2(3)}$$

$$= \frac{-8 \pm \sqrt{76}}{6}$$

$$= \frac{-4 \pm \sqrt{19}}{3}$$

Ex 2: $6(x+2)^2 - 4(x+1)^2 = 8$

$$2x^2 + 16x + 12 = 0$$

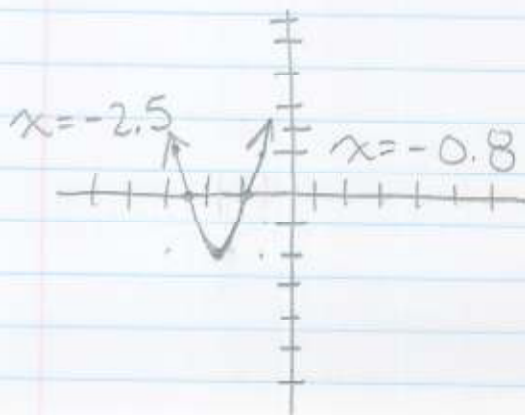
$$x = \frac{-16 \pm \sqrt{(16)^2 - 4(2)(12)}}{2(2)}$$

$$= \frac{-16 \pm \sqrt{256 - 96}}{4}$$

$$= \frac{-16 \pm \sqrt{160}}{4}$$

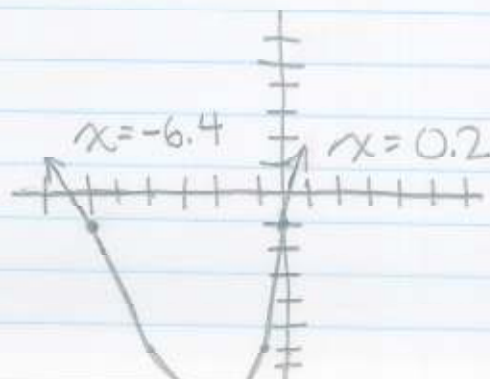
Solve by Graphing

a) $3(x+2)^2 - 2 = 0$



b) $x^2 + 6x - 1 = 0$

$$(x+3)^2 - 10$$



Solve by Factoring

Ex 1: $6x^2 - 4x = 0$

$$2x(3x - 2) = 0$$

$$x = 0 \quad x = \frac{2}{3}$$

Ex 2: $3x^2 + 4x + 1 = 0$

$$(3x + 1)(x + 1) = 0$$

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