

$$17) \begin{aligned} &a^2 + 6a^2 + 5 \\ &(a^2 + 5)(a^2 + 1) \\ &a^2 + 6a + 5 \\ &(a + 5)(a + 1) \end{aligned}$$

$5a^2 + a^2$

$$20) \begin{aligned} &9xy - 12xy^2 - 3x^3 \\ &3x(3y - 4y^2 - x^2) \end{aligned}$$

P.5 Solving Equations

Objectives: 8) I can solve equations with the square root property.

→ 9) I can solve equations by completing the square.

10) I can solve quadratic equations by factoring.

11) I can solve quadratic equations with the quadratic formula.

12) I can solve quadratic equations by finding x-intercepts.

Aug 31-11:03 AM

Aug 29-7:25 PM

Solve the equation by extracting square roots.

$$\begin{aligned} &x = 2, -1 \\ &\sqrt{2x-1} = 3 \quad \sqrt{4x^2 + 25} \quad x^2 + 2 = 6 \\ &2x-1 = 9 \quad \frac{2x}{2} = \frac{\pm 5}{2} \quad \sqrt{x^2} = \sqrt{4} \\ &2x = 10 \quad x = \pm \frac{5}{2} \quad x = \pm 2 \\ &x = 2 \\ &2x-1 = -3 \\ &2x = -2 \\ &x = -1 \end{aligned}$$

Solve the equation by completing the square.

$$\begin{aligned} &-\frac{8}{2} = -4 \quad (-4)^2 = 16 \\ &x^2 - 8x - 5 = 0 \quad x^2 - 12x - 7 = 0 \\ &x^2 - 8x + 16 - 5 = 0 + 16 \\ &(x-4)^2 - 5 = 16 \\ &\sqrt{(x-4)^2} = \sqrt{21} \\ &x-4 = \pm\sqrt{21} \\ &x = \pm\sqrt{21} + 4 \\ &x^2 + 10x = 17 \\ &\frac{10}{2} = 5 \quad x^2 + 10x + 25 = 17 + 25 \\ &5^2 = 25 \quad \sqrt{(x+5)^2} = \sqrt{42} \\ &x+5 = \pm\sqrt{42} \\ &x = \pm\sqrt{42} - 5 \end{aligned}$$

Aug 29-7:47 PM

Aug 29-8:06 PM

Solve the quadratic equations by factoring.

$$x^2 + 8x + 15 = 0$$

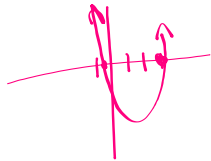
$$(x+3)(x+5) = 0$$

$$x+3=0$$

$$x=-3$$

$$x+5=0$$

$$x=-5$$



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

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

$$2x^2 - 6x + x - 3 = 0$$

$$2x(x-3) + 1(x-3) = 0$$

$$(x-3)(2x+1) = 0$$

$$x-3=0 \quad 2x+1=0$$

$$x=3 \quad x=-\frac{1}{2}$$

Aug 5-2:09 PM

Solve the equation using the quadratic formula.

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

$$ax^2 + bx + c = 0$$

$$3x^2 - 6x = 5$$

$$3x^2 - 6x - 5 = 0$$

$$2x^2 - 3x + 1 = 0$$

$$x = \frac{-(-6) \pm \sqrt{(-6)^2 - 4(3)(-5)}}{2(3)}$$

$$x = \frac{6 \pm \sqrt{96}}{6}$$

$$x = 1 \pm \frac{\sqrt{96}}{6}$$

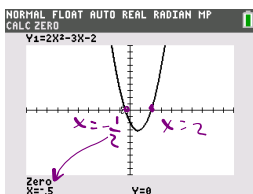
Aug 29-7:56 PM

Solve the equation by finding the x-intercepts.

Use a graphing calculator

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

$$x^2 + 4x + 3 = 0$$



Aug 29-7:30 PM

Mr. Mathman has a rectangular shaped garden where the length is 2 less than twice the width. If the area of the garden is 420 square feet, find the dimensions of the garden.

$$l = 2w - 2$$

$$w = w$$

$$A = lw$$

$$420 = (2w-2)w$$

$$420 = 2w^2 - 2w$$

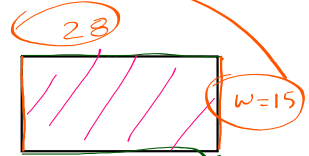
$$2w^2 - 2w - 420 = 0$$

$$2(w^2 - w - 210) = 0$$

$$x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4(1)(-210)}}{2(1)}$$

$$x = \frac{1 \pm 29}{2}$$

$$x = 15$$



$$\begin{array}{r} -210 \\ -21 \ 10 \\ \hline -30 \ 3 \\ -30 \ 7 \\ \hline -2 \\ -1 \ 1 \end{array}$$

Aug 29-10:29 PM

Aug 16-8:03 AM