

Solve

$$1) (x-1)^2 = 5$$

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

$$\frac{x-1}{1} = \pm\sqrt{5}$$

$$x = 1 \pm \sqrt{5}$$

$$\sqrt{(2x+3)^2} = \sqrt{-9}$$

$$2x+3 = \pm\sqrt{-9}$$

$$2x+3 = \pm 3i$$

$$\frac{2x}{2} = \frac{-3 \pm 3i}{2}$$

$$x = \frac{-3 \pm 3i}{2}$$

$$x = -\frac{3}{2} \pm \frac{3i}{2}$$

Apr 27-11:07 AM

$$2) x^2 - 4x - 6 = 0$$

$$x^2 - 4x + \underline{4} = 6 + 4$$

$$\left(\underline{x} - \underline{2}\right)^2 = 6 + \underline{4}$$

$$\sqrt{(x-2)^2} = \sqrt{10}$$

$$x-2 = \pm\sqrt{10}$$

$$x = 2 \pm \sqrt{10}$$

Apr 27-11:13 AM

Use quadratic formula

$$3) \quad 1x^2 - 2x - 2 = 0$$

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

$$\frac{2 \pm \sqrt{4 + 8}}{2}$$

$$\frac{2 \pm \sqrt{12}}{2} \rightarrow \frac{2 \pm 2\sqrt{3}}{2} = 1 \pm \sqrt{3}$$

Apr 27-11:16 AM

4) What kind of roots  
does  $n^2 - 2n - 35 = 0$  have

$$\frac{-(-2) \pm \sqrt{b^2 - 4ac}}{2(1)}$$

$$\begin{aligned} & (-2)^2 - 4(1)(-35) \\ & 4 + 140 \\ & 144 \end{aligned}$$

$D < 0$  Im  
 $D = 0$  Double  
 $D > 0$  Rational/Real  
Irrational

Apr 27-11:19 AM

4) If you can solve  $x^2 - 7x + 12 = 0$   
 $(x-3)(x-4) = 0$

Use that skill to solve  $x = 3$   
 $x = 4$

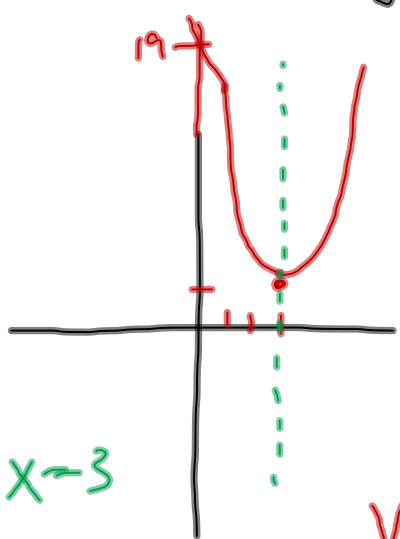
$$(x+2)^2 - 7(x+2) + 12 = 0$$

$$x+2 = 3 \quad \text{or} \quad x+2 = 4$$

$$x = 1 \quad x = 2$$

Apr 27-11:23 AM

5) Sketch  $y - 1 = 2(x-3)^2$



$$x=3$$

$$y = 2(x-3)^2 + 1$$

same

$$y = 2(x^2 - 6x + 9) + 1$$
$$y = 2x^2 - 12x + 19$$

$$V\left(\frac{-b}{2a}, \frac{4ac-b^2}{4a}\right)$$
$$f\left(\frac{b}{2a}\right)$$

Apr 27-11:26 AM

roots  
3, 5

$$r_1 + r_2 = \frac{-b}{a}$$

$$r_1 \times r_2 = \frac{c}{a}$$

$$ax^2 + bx + c = 0$$
$$1x^2 - 8x + 15 = 0$$

Apr 27-11:36 AM

roots

$1 + \sqrt{5}$        $1 - \sqrt{5}$

$$r_1 + r_2 = \frac{-b}{a} = \underline{2}$$

$$r_1 \times r_2 = \frac{c}{a} = \underline{-4}$$

$$F \quad 0 \quad 1 \quad 2$$
$$1 \quad -\sqrt{5} \quad \sqrt{5} \quad -5$$

$$1x^2 - 2x - 4 = 0$$

Apr 27-11:37 AM

$$\frac{2}{3}, -\frac{4}{3}$$

$$r_1 + r_2 = \frac{-2}{3} = -\frac{b}{a} \quad \left(\frac{-6}{9}\right)$$

$$r_1 \times r_2 = \left(\frac{-8}{9}\right) = \frac{c}{a}$$

$$9x^2 + 6x - 8 = 0$$

Apr 27-11:40 AM