QUADRATIC EQUATIONS

Factoring

$2p^2 - 15 = -p$

$2p^2 + p - 15 = 0$

$(2p - 5)(p + 3) = 0$

$2p - 5 = 0 \quad p + 3 = 0$

$p = 5/2 \quad p = -3$

$3x^3 - 5x^2 + 12x - 20 = 0$

$x^2(3x - 5) + 4(3x - 5)$

$(3x - 5)(x^2 + 4) = 0$

$3x - 5 = 0 \quad x^2 + 4 = 0$

$x = 5/3 \quad \sqrt{x^2} = \sqrt{-4}$

$x = \pm 2i$

$$(p+2)(p+9) = 44$$

$$p^2 + 9p + 2p + 18 = 44$$

$$p^2 + 11p - 26 = 0$$

$$(p+13)(p-2) = 0$$

$$\boxed{p = -13 \quad p = 2}$$

Completing the Square

$\sqrt{(x+4)^2} = \sqrt{81}$

$x + 4 = \pm 9$

$x = -4 \pm 9$

$-4+9 \quad -4-9$

$x = 5, -13$

FOIL

$(x-3)^2 = x^2 - 6x + 9$

$(x+7)^2 = x^2 + 14x + 49$

$7 \quad 7^2$

$x^2 + 10x + 25 = (x+5)^2$

5

$x^2 - 18x + 81 = (x-9)^2$

-9

$x^2 + 11x + \frac{121}{4} = (x + \frac{11}{2})^2$

$+\frac{11}{2}$

Divide → $\frac{5x^2}{5} - \frac{20x}{5} - \frac{15}{5} = \frac{0}{5}$

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

$x^2 - 4x + 4 = 3 + 4$ (−2)

$\sqrt{(x-2)^2} = \sqrt{7}$

$x - 2 = \pm\sqrt{7}$

$x = 2 \pm \sqrt{7}$

$2+\sqrt{7},\ 2-\sqrt{7}$

$\frac{3x^2}{3} + \frac{21x}{3} - \frac{3}{3} = \frac{0}{3}$

$x^2 + 7x - 1 = 0$

$x^2 + 7x + \frac{49}{4} = 1 + \frac{49}{4}$ ($+\frac{7}{2}$)

$\sqrt{\left(x + \frac{7}{2}\right)^2} = \sqrt{\frac{53}{4}}$

$x + \frac{7}{2} = \pm\frac{\sqrt{53}}{2}$

$x = -\frac{7}{2} \pm \frac{\sqrt{53}}{2}$

$\frac{-7 \pm \sqrt{53}}{2}$