

Ex. 1 slide 5

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

$x \cdot x + 6 \cdot x = 0$

$x(x+6) = 0$

$x = 0, x + 6 = 0$

$x = -6$

b) $2x^2 = x + 3$

$-x - 3 \quad -x - 3 = 1$

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

$a = 2, b = -1, c = -3$

Product = $ac = (2)(-3) = -6$

Sum = $b = -1$

Ex. 2 slide 9

a) $x^2 = 5$

$\sqrt{x^2} = \sqrt{5}$

$x = \pm\sqrt{5}$

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

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

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

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

$x = 3/2 \quad x = -1$

b) $(x-2)^2 = 16$

$\sqrt{(x-2)^2} = \sqrt{16}$

$x-2 = \pm 4$

$+2 \quad +2$

$x-4+4+2 = 6$

or

$x = -4+2 = -2$

$\{-2, 6\}$

Ex. 3 slide 12-13

$x^2 + 5x - 4 = 0$

$x^2 + 5 = -4$

$x^2 + 5x + (\frac{5}{2}) - 4 + (\frac{5}{2})^2$

$(x + \frac{5}{2})^2 = \frac{-16}{4} + \frac{25}{4}$

$(x + \frac{5}{2})^2 = \frac{9}{4}$

$x + \frac{5}{2} = \pm \frac{3}{2}$

$x = -\frac{5}{2} + \frac{3}{2}$

$x = -\frac{5}{2} + \frac{3}{2} = -\frac{2}{2} = -1$

Ex. 4 slide

~~$2x^2 - 8x - 5 = 0$~~

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Ex. 4 slides 20-22 Ex. 5 slide 24-25

$$3x^2 - 5x + 1 = 0$$

$$a = 3 \quad b = -5 \quad c = 1$$

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

$$x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(3)(1)}}{2(3)}$$

$$x = \frac{5 \pm \sqrt{25 - 12}}{6} = \frac{5 \pm \sqrt{13}}{6}$$

$$9x^2 + 3x - 2 = 0$$

$$x^2 \left(9 + \frac{3}{x} - \frac{2}{x^2} \right) = x^2(0)$$

$$9x^2 + 3x - 2 = 0$$

$$a = 9 \quad b = 3 \quad c = -2$$

$$x = \frac{-3 \pm \sqrt{3^2 - 4(9)(-2)}}{2(9)}$$

$$x = \frac{-3 \pm \sqrt{81}}{18}$$

$$x = \frac{-3 \pm 9}{18}$$

$$x = -3 \pm 9$$

$$x = \frac{-3 \pm 9}{18}$$

Ex. 6 slide

[Faint handwritten notes and equations, including a large '2' and various algebraic expressions.]