9.7: Factor Special Products

Goals: ***Recognize when polynomials are factorable by special products formulas

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RECALL

$(a + b)^2 =$

$(a - b)^2 =$

$(a + b)(a - b) =$

What do all three have in common?

**The important one to recognize is:

Factor:

Ex: $y^2 - 16$

Ex: $x^2 - 9$

Ex: $25m^2 - 16$

Ex: $x^2 - 49y^2$

Ex: $8 - 18n^2$

Ex: $4y^2 - 64$

Ex: $64c^2 - 16$

Ex: $x^2 - 81y^2$

Ex: $12 - 48m^2$

Ex: $n^2 - 12n + 36$

Ex: $9x^2 - 12x + 4$

Ex: $4s^2 + 4st + t^2$

Ex: $a^2 + 6a + 9$

Ex: $4n^2 + 20n + 25$

Ex: $9c^2 - 6cd + d^2$

Ex: $-3y^2 + 36y - 108$

Ex: $-2x^2 - 16x - 32$

Ex: $h^2 + 4h + 4$

Ex: $2y^2 - 20y + 50$

Ex: $3x^2 + 6xy + 3y^2$

Solve:

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

Ex: $x^2 - 5x + \frac{25}{4} = 0$

Ex: $a^2 + 6a + 9 = 0$

Ex: $w^2 - 14w = -49$

Ex: $n^2 - 81 = 0$

Ex: $x^2 = 49$

Ex: A window washer drops a wet sponge from a height of 64 feet. After how many seconds does the sponge land on the ground?

Ex: A rock is dropped from a riverbank that is 4 feet above the surface of the river. After how many seconds does the rock hit the water?