

November 14, 2016
 * Friday - Wednesday
 * Factoring
 ↳ using factoring to solve equations.

Nov 14-9:50 AM

Difference of Two Squares
 $a^2 - b^2 = (a+b)(a-b)$
 $169 - 49y^2$
 $a = 13 \rightarrow 13^2 = 169$
 $b = 7y \rightarrow (7y)^2 = 49y^2$
 $(13+7y)(13-7y)$
 $169 - 91y + 91y - 49y^2$
 $169 - 49y^2$

 $(7y+13)(7y-13)$
 $= 49y^2 - 91y + 91y - 169$
 $49y^2 - 169$
 $\times 49y^2 - 169 \neq 169 - 49y^2$

Nov 14-10:08 AM

$x^2 - 1 = 0$
 $a = x$
 $b = 1$
 $(x+1)(x-1) = 0$
 ① $x = -1$
 ② $x = 1$

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$64x^2 - 9$
 $a = 8x$ $b = 3$
 $(8x+3)(8x-3)$

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$144x^2y^2 - 25t^2$
 $a = 12xy$ $b = 5t$
 $(12xy+5t)(12xy-5t)$

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Sum & Difference of Two Cubes
Sum: $a^3 + b^3 = (a+b)(a^2 - ab + b^2)$
 $8x^3 + 27$
 $a = 2x$ $b = 3 \rightarrow 3^3 = 27$
 $\rightarrow (2x)^3 = 2^3 \cdot x^3 = 8x^3$
 $= (2x+3)(4x^2 - 6x + 9)$

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$$x^3 + 125$$

$$a = x \quad b = 5$$

$$(x+5)(x^2 - 5x + 25)$$

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$$343 - x^3y^3$$

$$a = 7 \quad b = xy$$

$$(7-xy)(49 + 7xy + x^2y^2)$$

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② Diff. $\therefore a^3 - b^3 = (a-b)(a^2 + ab + b^2)$

$$64x^3 - 125$$

$$a = 4x \quad b = 5$$

$$(4x-5)(16x^2 + 20x + 25)$$

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Practice Problems

$$225 - 25x^2$$

$$x^3 - 27y^3$$

$$64x^3 + 216$$

$$x^3y^3 - 1$$

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