

March 12, 2012 ^{Alg2}

Is there anything to correct?



3/12 - Difference of Squares, Difference/Sum of Cubes

Difference of Squares

$$a^2 - b^2 = (a - b)(a + b)$$

Handwritten annotations:
- Green circles around a^2 and b^2 in the original expression, and $a-b$ and $a+b$ in the factored form.
- Orange lines connecting $a-b$ to a and b in the original expression, and $a+b$ to a and b in the original expression.
- The word "conjugate" is written in orange next to the factored form.

$$r^2 - 16 = (r - 4)(r + 4)$$

$$4a^2 - 9 = (2a - 3)(2a + 3)$$

Handwritten annotation: "conjugate" written in orange next to the factored form.

$$\begin{aligned} & 75a^2 - 12 \\ &= 3(25a^2 - 4) \\ &= 3(5a - 2)(5a + 2) \end{aligned}$$

$$\begin{aligned} & 8u^3 - 2v^2u \\ &= 2u(4u^2 - v^2) \\ &= 2u(2u - v)(2u + v) \end{aligned}$$

$$\begin{aligned} & 36m^2 - 16n^2 \\ &= 4(9m^2 - 4n^2) \\ &= 4(3m - 2n)(3m + 2n) \\ &= (6m - 4n)(6m + 4n) \\ &= 2(3m - 2n) \cdot 2(3m + 2n) \\ &= 4(3m - 2n)(3m + 2n) \end{aligned}$$

Difference/Sum of Cubes

$$a^3 \pm b^3 = (a \pm b)(a^2 \mp ab + b^2)$$

$$= \overset{m^3 + 8}{(m+2)(m^2 - 2m + 4)}$$

$$= \overset{u^3 - 27}{(u-3)(u^2 + 3u + 9)}$$

$$125x^3 - 64$$
$$= (5x - 4)(25x^2 + 20x + 16)$$

different signs
always +

$$27 - 8u^3$$
$$= (3 - 2u)(9 + 6u + 4u^2)$$

$$54x^3 + 16$$
$$= 2(27x^3 + 8)$$
$$= 2(3x + 2)(9x^2 - 6x + 4)$$

$$27x^4 + 64x$$
$$= x(27x^3 + 64)$$
$$= x(3x + 4)(9x^2 - 12x + 16)$$

$$\begin{aligned} & 432x - 2x^4 \\ &= 2x(216 - x^3) \\ &= 2x(6-x)(36+6x+x^2) \end{aligned}$$

$$\begin{aligned} & x^7 + xy^6 \\ &= x(x^6 + y^6) \\ &= x(x^2 + y^2)(x^4 - x^2y^2 + y^4) \end{aligned}$$

$$\begin{aligned} & 24yx^6 - 81y^7 \\ &= 3y(8x^6 - 27y^6) \\ &= 3y(2x^2 - 3y^2)(4x^4 + 6x^2y^2 + 9y^4) \end{aligned}$$

Questions???

Homework

Green FACTORING WS3
#1-29 odd
Due Tuesday

Don't forget your baby pictures!