

Factoring Review

SWBAT factor expressions using difference of squares, trinomial factoring, GCF, and grouping.

Factoring #1: Greatest Common Factor

All expressions have the potential of being factored using GCF. Check for it every time!

1. $3ab^2 - 6a^2b$ $3ab(b - 2a)$	2. $5x^3 + 6xy$ $x(5x^2 + 6y)$	3. $xyz + 3x^2y^2z^2$ $xyz(1 + 3xyz)$
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Factoring #2: Grouping (4-term polynomials)

Factor by grouping the first two terms together, the second two terms together, and removing a GCF.

4. $30b^4 - 45b^3 - 10b^2 + 15b$ $15b^3(2b-3) - 5b(2b+3)$ $\rightarrow (15b^2 - 5b)(2b-3)$ *don't forget GCF $5b(3b-1)(2b-3)$	5. $6x^3 + 9x^2 + 2x + 3$ $3x^2(2x+3) + 1(2x+3)$ $(3x^2+1)(2x+3)$	6. $8t^3 + 36t^2 + 2t + 9$ $4t^2(2t+9) + 1(2t+9)$ $(4t^2+1)(2t+9)$
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Factoring #3: Factoring trinomials ($ax^2 + bx + c$)

X-Factor (what multiplies to "ac" that adds to "b"), split into four terms, and continue by grouping.

7. $x^2 + 6x + 8$ $(x+4)(x+2)$	8. $3x^2 - 18x + 24$ $3(x^2 - 6x + 8)$ $3(x-4)(x-2)$	9. $2x^3 - 2x^2 - 12x$ $2x(x^2 - x - 6)$ $2x(x-3)(x+2)$
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Factoring #4: Difference of Squares $a^2 - b^2 = (a - b)(a + b)$

There must be a subtraction sign and two perfect square binomials in order for this to work!

10. $y^2 - \frac{9}{25}$ $(y + \frac{3}{5})(y - \frac{3}{5})$	11. $3x^2 - 75$ $3(x^2 - 25)$ $3(x+5)(x-5)$	12. $x^4 - 81$ $(x^2 - 9)(x^2 + 9)$ $(x+3)(x-3)(x^2 + 9)$
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