

DO NOW

Factor: 1) $x^2 + 16x$

GCF $x(x + 16)$

D.O.T.S. 2) $\sqrt{9a^2} - \sqrt{25}$

$(3a - 5)(3a + 5)$

Trinomial 3) $n^2 - 13n + 36$

$(n - 9)(n - 4)$

Apr 7-8:31 AM

Types of Factoring

- 1) GCF - Any # of terms
- 2) Difference Of Two perfect Squares (DOTS)
Binomial / Perfect Squares / Subtraction
- 3) Trinomial (a = 1 or AC Method) (3 terms)
- 4) Grouping Must have 4 terms

Mar 13-7:14 AM

Factoring Polynomials Completely

Step 1: Look for a GCF

If there is a GCF, Factor it out

Step 2: Look at the number of terms in the polynomial

<p>Binomial - 2 Terms</p> <p>Difference of two perfect squares?</p>	<p>Trinomial - 3 Terms</p> <p>Is it in the form of $ax^2 + bx + c$?</p> <p>Try to use AC Method to factor</p>	<p>Polynomial - 4 Terms</p> <p>Try Factoring by Grouping</p>
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Step 3: Look at each factor again. Can it be factored further?

Be careful with D.O.T.S.

Mar 10-12:42 PM

Factor completely.

$$1) \frac{3x^2}{3} - \frac{6x}{3} - \frac{24}{3}$$

$$3(x^2 - 2x - 8)$$

$$3(x+2)(x-4) \begin{array}{l} -8 \quad -2 \\ \text{OR} \\ -4 \cdot 2 \quad -4 + 2 \end{array}$$

$$3(x-4)(x+2)$$

$$2) \frac{xy^2}{x} - \frac{4x}{x}$$

$$x(y^2 - 4)$$

$$x(y+2)(y-2)$$

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Factor completely.

$$3) \frac{2d^3}{2} - \frac{10d^2}{2} - \frac{4d}{2} + \frac{20}{2}$$

$$2(d^3 - 5d^2 - 2d + 10)$$

$$2(d^2(d-5) - 2(d-5))$$

$$2(d^2 - 2)(d-5)$$

$$4) x^4 - 16$$

$$(x^2 - 4)(x^2 + 4)$$

$$(x-2)(x+2)(x^2 + 4)$$

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Factor completely.

$$5) d^3 - 3d^2 + 2d$$

$$d(d-2)(d-1)$$

$$6) 5n^2 - 45$$

$$5(n^2 - 9)$$

$$5(n-3)(n+3)$$

$$7) 4x^3 - 14x^2 - 16x + 56$$

$$2(2x^3 - 7x^2 - 8x + 28)$$

$$2(x^2 - 4)(2x - 7)$$

$$2(x-2)(x+2)(2x-7)$$

$$8) 75a^2 - 30a + 3$$

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