

1/15/12

Factoring the Greatest Common Factor Part deux, this time it's personal.

Again: Things to Remember.

- Divide by what's in common.
- Whatever you divide by goes on the outside of the parentheses.

Factor

Ex

1

$$\frac{12m^5n^2}{3m^3n} + \frac{9m^4n}{3m^3n} + \frac{6m^3n^2}{3m^3n}$$

$$3m^3n(4m^2n + 3m + 2n)$$

Diagram illustrating the factoring process for the first example. It shows the terms  $m^5$ ,  $m^4$ , and  $m^3$  with arrows pointing to a common factor of  $m^3$ . The remaining terms are  $m^2$ ,  $m$ , and  $1$ .

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Ex

2

$$\frac{x^5}{x^2} + \frac{x^4}{x^2} + \frac{x^3}{x^2} - \frac{x^2}{x^2}$$

$$x^2(x^3 + x^2 + x - 1)$$

3

$$\frac{2x^7}{2x^3} - \frac{2x^6}{2x^3} - \frac{64x^5}{2x^3} + \frac{4x^3}{2x^3}$$

$$2x^3(x^4 - x^3 - 32x^2 + 2)$$

Shortcut: When you divide variables, you just subtract the exponents.