Unit 5 Day 8
5-6 GCF Factoring

GCF = Greatest Common Factor

Expand $2x(3x-4)$
$= 6x^2 - 8x$

$6x^2 - 8x$
$= 2x(3x-4)$

Factoring Polynomials means to rewrite as a product of factors. It is the "opposite" of distribution.

Find the GCF of each:

1) $2x = 2 \cdot x$
$6x^2 = 2 \cdot 3 \cdot x \cdot x$

$\therefore GCF = 2x$

2) $9x^2 y^2 = 3 \cdot 3 \cdot x \cdot x \cdot y \cdot y$
$6xy^3 = 2 \cdot 3 \cdot x \cdot y \cdot y \cdot y$

$\therefore GCF = 3xy^2$

3) $-8x^3 y = -2 \cdot 2 \cdot 2 \cdot x \cdot x \cdot x \cdot y$
$24x^5 y^3 = 2 \cdot 2 \cdot 2 \cdot 3 \cdot x \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y$
$-16x^2 y = -2 \cdot 2 \cdot 2 \cdot 2 \cdot x \cdot x$

$\therefore GCF = 2^3 x^2 = 8x^2$

$GCF = -8x^2$ (take the sign of 1st term)

4) $-28x^2 y^5$
$-8x^3 y^2$
$12x^5 y^3$

$GCF = -4x^2 y^2$

Factor using GCF.

Factor $6x^2 - 15x$

$= 3x(2x) - 3x(5)$

$= 3x(2x - 5)$

1) Find the GCF

2) Optional – rewrite as products w/ GCF.

3) Factor out GCF + rewrite

Factor:

5) $-12x^3 - 15x^2$
$= -3x^2(4x + 5)$

Check! $-3x^2(4x + 5)$
$= -12x^3 - 15x^2$ ✓

6) $8x^3 - 28x^2 + 4x$ ✳
$= 4x(2x^2 - 7x + 1)$

7) $8x^2y^2 - 4x^2y - 6xy$
$= 2xy(4xy - 2x - 3)$

Practice 5-8