Common Factor

Remove a common factor from each of the following

* You ALWAYS try common factor first

a) $5a^2 - 10a^3$

$5 \cdot a \cdot a - 10 \, a \cdot a \cdot a$

$5a^2(1 - 2a)$

b) $15m^2n - 18mn^2$

$3mn(5m - 6n)$

c) $12a^2 - 9a + 3$

$3(4a^2 - 3a + 1)$

The first thing you try to do in **any** factoring question is to try to remove a common factor

Apr 25-10:14 AM

Factor by Grouping

$2x(x - 1) - 5(x - 1)$

$(x-1)(2x-5)$

$1x - 2x = -1x$

$(k^2 + 5k + 3) - 2(k^2 + 5k + 3)$

$(k^2+5k+3)(1-2)$

$(k^2+5k+3)(-1)$

Apr 25-10:18 AM

Factoring Simple Trinomials

Trinomial: A polynomial containing 3 terms

Ex: $x^2 + 7x + 12$

Trinomials are usually in the form $ax^2 + bx + c$. When we try to factor a polynomial we use the following method.

We look for 2 numbers that multiply to **a * c**
These same numbers must add to **b**

We use the **"box"** method to help us with this

$ax^2 + bx + c$

$1x^2 + 7x + 12$

4
3

$a \times c$ (12)
1×12

+6
7

(400)
1 × 400
2 × 200
4 × 100
5 × 80

Complete handout on "The box"

× 18
+ 3

6
−2

× −12
+ 4

Apr 25-10:20 AM

Factor $1x^2 + 7x + 10$

5
2

× 10
+7

$\frac{5}{1}$ $\frac{2}{1}$

* When we factor a trinomial it simplifies into 2 binomials

$(x + 5)(1x + 2)$

$1p^2 + 2p - 3$

3
−1

× −3
+2

$\frac{3}{1}$ $\frac{-1}{1}$

$(1p + 3)(1p - 1)$

Apr 25-10:25 AM

Factor: $5y^2 - 40y + 60$

$5(y^2 - 8y + 12)$

$-6, -2$ $\times 12$ -8 $\quad \frac{-6}{1} \quad \frac{-2}{1}$

$5 \cdot (y-6) \cdot (y-2)$

$2m^3 - 18m^2 - 20m$

$2m(m^2 - 9m - 10)$

$-10, +1$ $\times -10$ -9 $\quad \frac{-10}{1} \quad \frac{1}{1}$

$2m(m-10)(m+1)$

Apr 25-10:27 AM

$x^4 + 7x^2 + 10$

$2, 5$ $\times 10$ $+7$ $\quad \frac{2}{1} \quad \frac{5}{1}$

$(x^2+2)(x^2+5)$

Apr 25-10:29 AM

Assignment:

Pg. 347
2, 6, 13 and 16 odds

Pg. 365
5-7, 13, 14, 16, 17, 19, 20 all odds

Apr 25-10:29 AM