2.4 –E- Removing the common factor

A Factor is an integer that divides evenly into another number.

The factors of 6 are… _____

The factors of 24 are…

_____

Why are there 60 seconds in a minute, why not 100?

Factors of 60: _____

Factors of 100: _____

60 has 12 factors.
100 has 9 factors.

The Babylonians realized
60 is more convenient for their
number system! (More factors)

The Greatest Common Factor (GCF) of a polynomial: is the largest factor that divides evenly into each term.

➤ Factoring is the exact opposite of expanding.
➤ We expand a product and factor a sum.
➤ To factor by removing the Greatest Common Factor:
  1. Find the GCF→ the gcf of the coefficients , and
            the gcf of the variables
            (for each variable it will be the one
              with the smallest exponent)
  2. Find the second factor: divide each term in the polynomial by the GCF you found.
  3. Always check by expanding.

Ex 1: Find the gcf

a)   8 , 16 , 40   _____

b) $6x^2$, $24x^3$, $12x^4$ _____

c) $28x^2y^2$, $14x^3y^2$, $21x^2y^3$ _____

d) $15a^6b^7$, $3a^3b^5$, $21a^6b^4$ _____

Ex 2: Factor by removing the gcf

a) $5x + 10y - 15$ b) $12x^2 - 8x$

Ex 3: Factor by pulling out the GCF

$4x+6=$ _____

$9x-15=$ _____

$6x^2+10x=$ _____

$49x^3y^2 - 21x^2y^2 + 14x^3y^3=$ _____

$2a^2b^2-6ab^3+4ab^2=$ _____

$x(x+3) + 2(x+3)=$ _____

Practice:
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