

9.5 Common Factors

Factor \times Factor = Product

How to find common factor of polynomials:

1. Break each term into prime factors

Example: $3x^2 + 12x$

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

2. Find all factors they have in common

In this example they both have a 3 and an X

So $3x$ is the GCF.

3. Factor out the GCF and put the left overs in parentheses

$$\underbrace{(3x)}_{\text{GCF}}(x+4) \leftarrow \text{notice we multiply \#s back together.}$$

Might want to start with
Practice on monomial
GCF worksheet.

If we are factoring a 4-term polynomial, then
we factor by grouping into 2 terms each

Ex: $12ab - 15a - 8b + 10$

Step 1: Group into 2s

$$(12ab - 15a) \quad (-8b + 10)$$

if leading term is
negative, factor out
negative GCF

Step 2: Find GCF of each set.

$3a$

-2

Step 3: Factor GCF out

$$3a(4b - 5) - 2(4b - 5)$$

Note: polynomials have
a common factor
that's a binomial.

Step 4: Combine outsides / insides

$$(3a - 2)(4b - 5)$$

C.W. Factoring worksheet
H.W. Pg 450 13-