

5.1 GCF and Factoring by Groups

■ Need To Know

- Definitions
- How to factor by GCF
- How to factor by groups



The Greatest Common Factor

Definition - _____ means to write a number as product of smaller numbers.

Example:

Definition - _____ a polynomial means to write a polynomial as a product of smaller polynomials.

Example:



The Greatest Common Factor

Definition – The _____
for a polynomial is the largest monomial that
divides each term of the polynomial.

Examples – Find the GCF of each:

$$5x + 5$$

$$10x^6 + 15x^4$$

$$8a^6 + 12a^4 - 4a^3$$



The Greatest Common Factor

Factor each polynomial

$$ab + ac$$

$$5x + 5$$

$$10x^6 + 15x^4$$

$$8a^6 + 12a^4 - 4a^3$$



Practice

Factor each polynomial (you try)

$$25x^4 + 35x^3$$

$$20x^8 - 12x^7 + 4x^6$$



GCF's may not be Monomials

Factor:

$$x(x + a) + 2(x + a)$$



Factoring by Groups

Factor:

$$a^3 - 7a^2 + 4a - 28$$

Factor by Groups

1. No GCF and 4 terms
2. Factor GCF's from 2 groups of two
3. Factor binomial GCF from groups



Factoring by Groups

Factor by Groups :

$$8x^3 + 12x^2 - 14x - 21$$

Factor by Groups

1. No GCF and 4 terms
2. Factor GCF's from 2 groups of two
3. Factor binomial GCF from groups

end