

Essential Question: How do I find the greatest common factor and/or least common multiple for a set of monomials?

Vocabulary:

Factor:

Factors of

$$(x + 4)(x + 1) = x^2 + 5x + 4$$

Foctors of $x^2 + 5x + 4$

one of 2 or more #'s that When x together produce a given product.

Multiple

4: 4,8,12,16,20,24,28...

The result of X a number by an integer

MAENOAN Finding the Greatest Common Factor (GCF)

Steps:

- 1. List all factors of each number.
- 2. Find the greatest factor they have in common

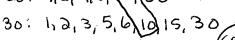
For larger #'s, you may want to find the prime factorization instead. Use the smallest exponent on like terms and multiply them together. the factors together Examples: Find the GCF

1. 28, 14 28: 1,2,4,7 145 1,2,7/11



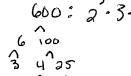
2. 20, 30

20: 1,2,4,5,70,20



3. 180, 600 = 3^{2} , 3, 5 =

320



TI-84> Math > Num > gcd Put a, between the #15

What about variables?

Use the smallest exponent on like terms and multiply them together! the factors

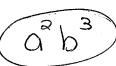
use variables they have in common and smallest exp. Examples: Find the GCF



2. $6x^2, 9x^4, -12x^5$



3. a^5b^4 , a^2b^3c



Finding the Least Common Multiple (LCM)

Steps:

- 1. List all factors of each number
- 2. Find the greatest one they have in common

*For larger #'s, you may want to find the prime factorization instead. Multiply the factors, using each common prime factor only once — if a number occurs more than once, use the one with the larger exponent)

TI-84 > MATH > NUM > LCM

Examples: Find the LCM

1) 20, 15

20: 20, 40, 60, 80...

2) 32,4 4: 4,8,12,16,30,24,28,82].

3) 18,27 18: 18,36,54,72 27: 27.54/81

54

60

What about variables?

Multiply the factors, using each common prime factor only once – if a humber occurs more than once, use the one with the larger exponent)

use an variables & biggest exponents

Examples: Find the LCM

1) $12x^2y^3$, $16xy^2$ $48x^3y^3$

2) $6xy^3z^4$, $8xz^2$ $34xy^3$ =

3) $2x^2$, 3y, $4xz^2$ $12x^2y^2$