

## Factoring -GCF Day 1

## Homework

Name Key

Date \_\_\_\_\_ Period \_\_\_\_\_

The greatest common factor (GCF) of two or more integers is the greatest number that is a factor of both the integers. EX: The GCF of 12 and 30 is 6.

The distributive property has been used to multiply a polynomial by a monomial. It can also be used to express a polynomial in factored form. Compare the two columns in the table below.

Multiplying	Factoring
$3(a + b) = 3a + 3b$	$3a + 3b = 3(a + b)$
$x(y - z) = xy - xz$	$xy - xz = x(y - z)$
$6x(2x + 1) = 6x(2x) + 6x(1)$ $= 12x^2 + 6x$	$12x^2 + 6x = 6x(2x) + 6x(1)$ $= 6x(2x + 1)$

## I. Complete.

1.  $9a + 18b = 9(\underline{a} + 2b)$

2.  $12mn + 80m^2 = 4m(3n + \underline{20m})$

3.  $\frac{7c^3}{7c^3} - \frac{7c^4}{7c^3} = 7c^3(\underline{1} - c)$

4.  $4xy^3 + 16x^2y^2 = \underline{4xy^2} (y + 4x)$   
GCF

## II. Factor each polynomial by finding the GCF.

5.  $24x + 48y$

$$\frac{24}{\text{GCF}} (x + 2y)$$

6.  $9x^2 - 3x$

$$\frac{3x}{\text{GCF}} (3x - 1)$$

7.  $45s^3 - 15s^2$

$$15s^2 (3s - 1)$$

8.  $q^3 - 13q^2 + 22q$

$$q (q^2 - 13q + 22)$$

9.  $2a^3 + 4a^2b + 2ab^2$

$$2a (a^2 + 2ab + b^2)$$

10.  $12a^3b + 96a^2b + 84ab$

$$12ab (a^2 + 8a + 7)$$