

# Common Factors

Warm-UP

Find the greatest common factor (GCF) of each set of numbers.

1. 6, 15

3

2. 16, 24, 60

4

3. 3, 6, 14, 28

Prime

Multiply.

4.  $4(h^2 - 5)$

$4h^2 - 20$

5.  $2b(b^2 - 9b)$

$2b^3 - 18b^2$

When two numbers are multiplied, they form a product. Each number is called a factor of that product.

Factor each polynomial.

$$4y^3 - 16y^4$$

$4y^3 - 16y^4$   
 $4y^3(1 - 4y)$

$$\frac{6p}{3p} + \frac{15p^2}{3p} - \frac{9pq}{3p}$$
$$3p(2 + 5p - 3q)$$

$$8r^4 + 17s^4$$

Prime

$$\frac{5am}{5a} - \frac{5an}{5a}$$
$$5a(m - n)$$

$$5x^3 - 5y^2$$

$$5(x^3 - y^2)$$

$$\frac{2c^4}{2c^2} - \frac{4c^3}{2c^2} + \frac{6c^2}{2c^2}$$
$$2c^2(c^2 - 2c + 3)$$

Try These

$$6ab + 3a$$

$$3a(2b + 1)$$

$$5x^3 + 10x^2 - 20x$$

$$5x(x^2 + 2x - 4)$$

$$2x^2 - 3y^2$$

Prime  
😊

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Factor each of the following.

7.  $a(b + 4) + c(b + 4)$

$$ab + 4a + cb + 4c$$

$$(b+4)(a+c)$$

$$ab + cb + 4a + 4c$$

8.  $r(\cancel{t+1}) + s(\cancel{t+1})$

$$(t+1)(r+s)$$

$$(r+s)(t+1)$$

Try This:  $a(x-3) + 6(x-3)$

$$(a+6)(x-3)$$

Factor by grouping.

$$x^2 + x + 2x + 2$$

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

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

$$mn + mp + 5n + 5p$$

$$m(n+p) + 5(n+p)$$

$$(n+p)(m+5)$$

$$y^2 - y - 2y + 2$$

$$y(y-1) - 2(y-1)$$

$$(y-1)(y-2)$$

Try This:

$$ax + bx + ay + by$$

$$(x+y)(a+b)$$

$$ax + bx - ay - by$$

$$x(a+b) - y(a+b)$$

$$(a+b)(x-y)$$

Assign Practice 9.5