

Name: Key Hr: \_\_\_\_\_

### Factoring Difference of Squares, Greatest Common Factor, and by Grouping

Factor the Difference of Squares

1.  $m^2 - 16$

$$(m+4)(m-4)$$

3.  $3r^2 - 27$

$$3(r^2 - 9)$$

$$3(r+3)(r-3)$$

Factor by factoring out the greatest common factor

5.  $7x^{10} + 7x^9$

$$7x^9(x+1)$$

Factor by grouping

7.  $(6x^3 + 9x) - (4x^2 - 6)$

$$3x(2x^2 + 3) - 2(2x^2 + 3)$$

$$(2x^2 + 3)(3x - 2)$$

Now practice factoring all types together

9.  $81b - 18$

$$9(9b - 2)$$

11.  $10x^4 + 5x^2$

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

13.  $4x^2 - 25$

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

15.  $(6x^3 + 9x) - 4x^2 - 6$

$$3x(2x^2 + 3) - 2(2x^2 + 3)$$

$$(2x^2 + 3)(3x - 2)$$

2.  $4k^2 - 81$

$$(2k+9)(2k-9)$$

4.  $x^2 - 49$

$$(x+7)(x-7)$$

6.  $6x^3 - 3x^2 - 8x$

$$x(6x^2 - 3x - 8)$$

8.  $(2x^2y + 6xy) - (x - 3)$

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

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

10.  $y^2 - 64$

$$(y+8)(y-8)$$

12.  $(4k+12) + k^2 + 3k$

$$4(k+3) + k(k+3)$$

$$(k+3)(4+k)$$

14.  $(2ac + ad) + 6bc + 3bd$

$$a(2c+d) + 3b(2c+d)$$

$$(2c+d)(a+3b)$$

16.  $2x^2 - 8$

$$2(x^2 - 4) =$$

$$2(x+2)(x-2)$$