

**EXTRA PRACTICE 11****Factoring Polynomials**

Use after Sections 5.1 - 5.4

Name \_\_\_\_\_

Examples. Factor completely.

a)  $4x^3 + 12x^2 - 8x = 4x(x^2 + 3x - 2)$

b)  $5x^3 - 3x^2 + 20x - 12 = x^2(5x - 3) + 4(5x - 3) = (5x - 3)(x^2 + 4)$

c)  $x^2 + 2x - 35 = (x + 7)(x - 5)$

d)  $3x^2 - 5x - 2 = (3x + 1)(x - 2)$

e)  $x^2 - 18x + 81 = (x - 9)^2$

f)  $4x^2 - 25y^2 = (2x + 5y)(2x - 5y)$

Factor.

1.  $x^2 - 6x - 16 =$  \_\_\_\_\_

2.  $4y^2 + 7y - 2 =$  \_\_\_\_\_

3.  $5a^3 - 25a^2 + 15a =$  \_\_\_\_\_

4.  $9x^2 - 16 =$  \_\_\_\_\_

5.  $x^2 - 64 =$  \_\_\_\_\_

6.  $a^2 + 12a + 27 =$  \_\_\_\_\_

7.  $6x^2 + 12x + 6 =$  \_\_\_\_\_

~~8.~~  $x^3 + 2x^2 - 5x - 10 =$  \_\_\_\_\_

9.  $x^2 - 10x + 21 =$  \_\_\_\_\_

10.  $12x^5 - 6x^3 + 3x^2 =$  \_\_\_\_\_

11.  $6y^2 - 54 =$  \_\_\_\_\_

12.  $4y^2 - 17y - 15 =$  \_\_\_\_\_

13.  $6x^2 - 7x + 2 =$  \_\_\_\_\_

14.  $5x^2 - 5 =$  \_\_\_\_\_

~~15.~~  $y^5 + 3y^3 + 4y^2 + 12 =$  \_\_\_\_\_

16.  $x^2 - 7x - 18 =$  \_\_\_\_\_