

Name: \_\_\_\_\_

## Factoring a Trinomial

**Exercise 1:** Factor each trinomial. If the trinomial cannot be factored, write prime.

1)  $b^2 + 5b + 4$

2)  $x^2 - 5x - 24$

3)  $a^2 + 3a + 5$

4)  $y^2 - 12y + 32$

5)  $y^2 + 12y + 27$

6)  $a^2 + 7a + 12$

7)  $d^2 - 11d + 28$

8)  $m^2 + 11m - 12$

9)  $a^2 - 4a + 4$

10)  $r^2 + 22r - 48$

11)  $x^2 + 10x + 25$

12)  $2a^2 + 14a - 16$

13)  $m^2 - 5m + 1$

14)  $3y^2 - 21y + 36$

15)  $b^2 - 3b - 18$

16)  $4x^2 + 28x + 40$

17)  $c^2 + 2c - 3$

18)  $z^2 + 13z + 40$

**Exercise 2:** Complete the trinomial  $x^2 - 6x + \text{????}$  with a positive integer so that the resulting trinomial can be factored.

**Exercise 3:** The volume of a rectangular prism is  $x^3 + 4x^2 + 3x$ . Find the length, width, and height of the prism if each dimension can be written as a monomial or binomial with integral coefficients. (Hint: Use the formula  $V = lwh$ .)

**Exercise 4:** Find all values of  $k$  so that the trinomial  $x^2 + kx + 10$  can be factored.