

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Factoring $x^2 + bx + c$ Assignment

Factor the following polynomials in  $x^2 + bx + c$  form.

1.  $x^2 + 17x + 72$

2.  $y^2 - 14y - 120$

3.  $a^2 - a - 2$

4.  $a^2 + 26a - 360$

5.  $x^2 + 15x + 50$

6.  $y^2 - 19y - 150$

7.  $b^2 + 6b + 9$

8.  $d^2 - 10d - 39$

9.  $y^2 + 8y - 105$

10.  $a^2 - 3a - 28$

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Factoring $x^2 + bx + c$ Assignment

11.  $x^2 + 15x + 54$

12.  $y^2 - 21y + 90$

13.  $a^2 - 4a - 45$

14.  $a^2 + 13a + 40$

15.  $x^2 + 30x + 225$

16.  $y^2 - 20y - 96$

17.  $b^2 + 18b + 81$

18.  $d^2 - 14d - 120$

19.  $y^2 + 12y + 36$

20.  $a^2 - 23a + 120$

**Factoring  $x^2 + bx + c$  Assignment****Answer:**Factor the following polynomials in  $x^2 + bx + c$  form.

**1.  $x^2 + 17x + 72$**

**Answer:**

$$x^2 = (x)(x)$$

$$72 = (8)(9)$$

$$17x = 8x + 9x$$

$$(x + 8)(x + 9)$$

**3.  $a^2 - a - 2$**

**Answer:**

$$a^2 = (a)(a)$$

$$-2 = (-2)(1)$$

$$-a = -2a + a$$

$$(a + 1)(a - 2)$$

**5.  $x^2 + 15x + 50$**

**Answer:**

$$x^2 = (x)(x)$$

$$150 = (10)(5)$$

$$15x = 10x + 5x$$

$$(x + 5)(x + 10)$$

**7.  $b^2 + 6b + 9$**

**Answer:**

$$b^2 = (b)(b)$$

$$9 = (3)(3)$$

$$6b = 3b + 3b$$

$$(b + 3)(b + 3)$$

**9.  $y^2 + 8y - 105$**

**Answer:**

$$y^2 = (y)(y)$$

$$-105 = (15)(-7)$$

$$8y = 15y - 7y$$

$$(y + 15)(y - 7)$$

**2.  $y^2 - 14y - 120$**

**Answer:**

$$y^2 = (y)(y)$$

$$-120 = (-20)(6)$$

$$-14y = -20y + 6y$$

$$(x - 20)(x + 6)$$

**4.  $a^2 + 26a - 360$**

**Answer:**

$$a^2 = (a)(a)$$

$$-360 = (36)(-10)$$

$$26a = 36a - 10a$$

$$(a + 36)(a - 10)$$

**6.  $y^2 - 19y - 150$**

**Answer:**

$$y^2 = (y)(y)$$

$$-150 = (-25)(6)$$

$$-19y = -25y + 6y$$

$$(y - 25)(y + 6)$$

**8.  $d^2 - 10d - 39$**

**Answer:**

$$d^2 = (d)(d)$$

$$-39 = (-13)(3)$$

$$-10d = -13d + 3d$$

$$(d - 13)(d + 3)$$

**10.  $a^2 - 3a - 28$**

**Answer:**

$$a^2 = (a)(a)$$

$$-28 = (-7)(4)$$

$$-3a = -7a + 4a$$

$$(a + 1)(a - 2)$$

**Factoring  $x^2 + bx + c$  Assignment**

**11.  $x^2 + 15x + 54$**

**Answer:**

$x^2 = (x)(x)$

$54 = (9)(6)$

$15x = 9x + 6x$

$(x + 9)(x + 6)$

**13.  $a^2 - 4a - 45$**

**Answer:**

$a^2 = (a)(a)$

$-45 = (-9)(5)$

$4a = -9a + 5a$

$(a - 9)(a + 5)$

**15.  $x^2 + 30x + 225$**

**Answer:**

$x^2 = (x)(x)$

$225 = (15)(15)$

$30x = 15x + 15x$

$(x + 15)(x + 15)$

**17.  $b^2 + 18b + 81$**

**Answer:**

$b^2 = (b)(b)$

$81 = (9)(9)$

$18b = 9b + 9b$

$(b + 9)(b + 9)$

**19.  $y^2 + 12y + 36$**

**Answer:**

$y^2 = (y)(y)$

$36 = (6)(6)$

$12y = 6y + 6y$

$(y + 6)(y + 6)$

**12.  $y^2 - 21y + 90$**

**Answer:**

$y^2 = (y)(y)$

$90 = (-15)(-6)$

$-21y = -15y - 6y$

$(y - 15)(y - 6)$

**14.  $a^2 + 13a + 40$**

**Answer:**

$a^2 = (a)(a)$

$40 = (8)(5)$

$13a = 8a + 5a$

$(a + 8)(a + 5)$

**16.  $y^2 - 20y - 96$**

**Answer:**

$y^2 = (y)(y)$

$-96 = (-24)(4)$

$-20y = -24y + 4y$

$(y - 24)(y + 4)$

**18.  $d^2 - 14d - 120$**

**Answer:**

$d^2 = (d)(d)$

$-120 = (-20)(6)$

$-14d = -20d + 6d$

$(d - 20)(d + 6)$

**20.  $a^2 - 23a + 120$**

**Answer:**

$a^2 = (a)(a)$

$120 = (-15)(-8)$

$-23a = -15a - 8a$

$(a - 15)(a - 8)$