

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

## Factoring $ax^2 + bx + c$ Bell Work

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

1.  $4x^2 - 32x + 64$

2.  $6y^2 - 22y + 20$

3.  $3a^2 - a - 4$

4.  $2a^2 + 2a - 24$

5.  $5x^2 - 5x - 30$

6.  $4y^2 - 2y - 72$

7.  $3b^2 + 7b + 2$

8.  $2d^2 - 7d + 5$

9.  $5y^2 + y - 22$

10.  $2a^2 - 22a + 36$

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

1.  $4x^2 - 32x + 64$

**Answer:**

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

$64 = (-8)(-8)$

$-32x = -16x - 16x$

$(2x - 8)(2x - 8)$

3.  $3a^2 - a - 4$

**Answer:**

$3a^2 = (3a)(a)$

$-4 = (-4)(1)$

$-a = -4a + 3a$

$(3a - 4)(a + 1)$

5.  $5x^2 - 5x - 30$

**Answer:**

$5x^2 = (5x)(x)$

$-30 = (10)(-3)$

$-5x = 10x - 15x$

$(5x + 10)(x - 3)$

7.  $3b^2 + 7b + 2$

**Answer:**

$3b^2 = (b)(3b)$

$2 = (2)(1)$

$7b = 6b + b$

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

9.  $5y^2 + y - 22$

**Answer:**

$5y^2 = (5y)(y)$

$22 = (11)(-2)$

$y = 11y - 10y$

$(5y + 11)(y - 2)$

2.  $6y^2 - 22y + 20$

**Answer:**

$6y^2 = (6y)(y)$

$20 = (-10)(-2)$

$-2y = -10y - 12y$

$(6y - 10)(y - 2)$

4.  $2a^2 + 2a - 24$

**Answer:**

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

$-24 = (8)(-3)$

$2a = 8a - 6a$

$(2a + 8)(a - 3)$

6.  $4y^2 - 2y - 72$

**Answer:**

$4y^2 = (4y)(y)$

$-72 = (-18)(4)$

$-2y = -18y + 16y$

$(4y - 18)(y + 4)$

8.  $2d^2 - 7d + 5$

**Answer:**

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

$5 = (-5)(-1)$

$-7d = -5d - 2d$

$(2d - 5)(d - 1)$

10.  $2a^2 - 22a + 36$

**Answer:**

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

$36 = (-9)(-4)$

$-22a = -18a - 4a$

$(a - 9)(2a - 4)$