

Grace Bookye

College AlgebraPreliminary Assessment #2

**Directions:** Provide complete responses to each question. Make sure to show your work and factor completely.

1.  $x^2 - 36$

$$\begin{aligned}
 &x^2 - 36 \\
 &x^2 + 6x - 6x - 36 \\
 &(x^2 + 6x) + (-6x - 36) \\
 &x(x+6) - 6(x+6) \\
 &(x-6)(x+6)
 \end{aligned}$$

2.  $25 - x^2$

$$\begin{aligned}
 &-x^2 + 25 \\
 &-x^2 + 5^2 \\
 &5^2 - x^2 \\
 &(5-x)(5+x) \\
 &(-x+5)(x+5)
 \end{aligned}$$

3.  $x^2 - 10x + 25$

$$\begin{aligned}
 &x^2 - 5x - 5x + 25 \\
 &(x^2 + 5x - 5x + 25) \\
 &x(x-5) - 5(x-5) \\
 &x(x-5) - 5(x-5) \\
 &(x-5)(x-5) \\
 &(x-5)(x-5) \\
 &(x-5)^2
 \end{aligned}$$

4.  $x^2 - 10x + 24$

$$\begin{aligned} & x^2 - 4x - 6x + 24 \\ & (x^2 - 4x) + (-6x + 24) \\ & x(x-4) - 6(x-4) \\ & (x-6)(x-4) \end{aligned}$$

5.  $4x^2 + 16x + 16$

$$\begin{aligned} & 4(x^2 + 4x + 4) \\ & 4(x^2 + 2x + 2x + 4) \\ & 4(x(x+2) + 2(x+2)) \\ & 4(x+2)(x+2) \\ & 4(x+2)^2 \end{aligned}$$

6.  $4a^2 + 53a + 28$

$$\begin{aligned} & 4a^2 + 53a + 28 = 4 \\ & 4a^2 + 56a - 2a + 28 \\ & 4a(a+14) - 2(a+14) \\ & (a+14)(4a-2) \end{aligned}$$

7.  $9x^2 + 66x + 2$

$$9x^2 + 66x + 21$$

$$3(3x^2 + 11x + 7)$$

8.  $16x^2 + 60x + 100$

$$4(4x^2 + 15x + 25)$$

9.  $3x^3 - 4x^2 + 9x - 12$

$$3x^3 - 4x^2 + 9x - 12$$

$$12x^2 + 9x - 12$$

$$x^2(3x - 4) + 3(3x - 4)$$

$$(3x - 4)(x^2 + 3)$$

Date: 3/

10.

$$5x^3 - 10x^2 + 3x - 6$$

$$5x^3 + 3x - 10x^2 - 6$$

$$x(5x^2 + 3) - 2(5x^2 - 3)$$

$$(x-2)(5x^2+3)$$