

Unit 6B Practice Cumulative

1. **Factor** each expression completely.

- A) $x^2 - 16x$ B) $x^2 - 16$ C) $x^2 + x - 6$ D) $2x^2 + 4x - 48$ E) $2x^2 + 3x - 9$

2. **Convert** the following to Standard form:

- A) $y = (5x - 2)(x + 4)$ B) $y = -2(x - 3)(2x - 1)$ C) $y = 3(x + 2)^2 - 6$

3. **Convert** the following to Vertex form:

- A) $y = x^2 - 6x + 1$ B) $y = 2x^2 + 20x - 5$ C) $y = (x - 3)(x - 1)$

4. Zero's are also called _____, _____, and _____.

5. Find the **x-intercepts** for: $x^2 - 81$

6. Find the **zero's** for: $4x^2 + x - 5 = 0$

7. Find the **solutions** for: $x^2 + 5x - 6 = 0$

8. Solve the following using all 3 techniques (factoring, quadratic formula, and completing the square):

$$x^2 + 8x - 9 = 0$$

9. Solve the following by any method:

- A) $x^2 - 2x = 0$ B) $x^2 - 121 = 0$ C) $x^2 + 2x - 6 = 0$ D) $2x^2 - 9x - 5 = 0$

10. What is the discriminant?

11. Use the discriminant to determine the number and type of solutions for the following:

- A) $y = x^2 - 5x + 4$ B) $y = 2x^2 + 3x + 5$ C) $y = 2x^2 + 10x + 5$