Review - Sketching Quadratics from Factors

All expressions factor completely over the integers.

For each quadratic:

1. **Factor completely.**
2. **Determine the roots** by setting each factor equal to zero.
3. **Determine the y-intercept** by evaluating the function at $x = 0$.
4. **Label the roots and the y-intercept** on a coordinate grid.
5. **Sketch the parabola**

1. Binomial × Binomial

Factor completely.

1. $x^2 + 5x + 6$
2. $x^2 + 7x + 10$
3. $x^2 - x - 12$
4. $x^2 - 9x + 20$
5. $x^2 + 2x - 15$
6. $x^2 - 11x + 24$

2. Binomial × Binomial — with GCF

Factor completely.

1. $2x^2 + 6x + 4$
2. $3x^2 + 12x + 9$
3. $4x^2 - 8x - 12$
4. $5x^2 - 20x + 15$
5. $-2x^2 + 14x - 24$
6. $6x^2 - 3x - 9$

3. Binomial × Binomial — Perfect Squares

Factor completely.

1. $x^2 + 6x + 9$
2. $x^2 - 10x + 25$
3. $x^2 + 14x + 49$
4. $x^2 - 12x + 36$
5. $x^2 + 18x + 81$
6. $x^2 - 16x + 64$

4. Binomial × Binomial — Perfect Squares with GCF

Factor completely.

1. $2x^2 + 8x + 8$
2. $3x^2 - 12x + 12$
3. $4x^2 + 20x + 25$
4. $5x^2 - 30x + 45$
5. $-2x^2 - 12x - 18$
6. $6x^2 + 24x + 24$

5. Binomial × Binomial — Difference of Squares
Factor completely.

1. $x^2 - 4$
2. $x^2 - 9$
3. $4x^2 - 25$
4. $9x^2 - 16$
5. $25x^2 - 1$
6. $16x^2 - 49$

6. Binomial × Binomial — Difference of Squares with GCF
Factor completely.

1. $3x^2 - 12$
2. $5x^2 - 45$
3. $-2x^2 + 18$
4. $4x^2 - 100$
5. $6x^2 - 54$
6. $-8x^2 + 32$

7. Binomial × Binomial — With "a"
Factor completely.

1. $2x^2 + 5x + 2$
2. $3x^2 + 8x + 4$
3. $2x^2 - 7x - 4$
4. $3x^2 - 5x - 2$
5. $4x^2 + 11x + 6$
6. $6x^2 - x - 2$

8. Binomial × Binomial — With "a" and GCF
Factor completely.

1. $4x^2 + 12x + 8$
2. $6x^2 - 6x - 12$
3. $-8x^2 + 4x + 12$
4. $9x^2 + 15x + 6$
5. $10x^2 - 15x - 25$
6. $-12x^2 - 6x + 18$