

Section 3.3 Extra Practice

- What value of c makes each trinomial expression a perfect square? What is the equivalent binomial square expression for each?
 - $x^2 - 10x + c$
 - $x^2 + 8x + c$
 - $x^2 - 12x + c$
 - $x^2 + 2x + c$
- Write each function in vertex form by completing the square. Use your answer to identify the vertex of the function.
 - $y = x^2 + 2x - 4$
 - $y = x^2 - 6x + 13$
 - $y = x^2 + 8x + 6$
 - $y = x^2 + 24x + 54$
- Convert each function to the form $y = a(x - p)^2 + q$ by completing the square.
 - $y = 3x^2 - 12x + 13$
 - $y = -2x^2 - 20x - 56$
 - $y = 6x^2 - 48x$
 - $y = -4x^2 - 56x - 196$
- Write each function in vertex form. Determine the maximum or minimum of each function and the x -value at which it occurs. Then, sketch a graph of the function.
 - $y = x^2 + 6x + 4$
 - $y = 2x^2 - 16x + 31$
 - $y = -3x^2 - 12x - 7$
 - $y = -x^2 + 18x$
- Convert each function to the form $y = a(x - p)^2 + q$. State the coordinates of the vertex, axis of symmetry, maximum or minimum value, domain, and range.
 - $y = x^2 + 10x + 16$
 - $y = -3x^2 - 6x + 3$
 - $y = 2x^2 + 30x + 117$
 - $y = 6x^2 - 4x + \frac{4}{3}$
- If a farmer harvests his crop today, he will have 1200 bushels worth \$6 per bushel. Every week he waits, the crop yield increases by 100 bushels, but the price drops 30¢ per bushel.
 - What quadratic function can be used to model this situation?
 - When should the farmer harvest his crop to maximize his revenue? What is the maximum revenue?
 - What assumptions are being made in using this model?

