Unit 2: Quadratic Functions Lesson 2.2

Coach's Corner - II

1. Use the *Quadratic Function* applet from *Lesson 2.2* to answer this question. You won't be able to enter the exact function into the applet, but you can use patterns seen there to guide you. For the function $f(x) = -2x^2 + 4x - 9$:

    a. Explain what happens if a is changed to 0.

    The function is no longer quadratic. It will be linear. As such, the graph of the function will no longer be a parabola. It will be a straight line.

    b. How does the graph of the function change if a is 2 instead of –2?

    The graph of the function will open upwards.

    c. How does the graph of the function change if a is –5 instead of –2?

    It will open in the same direction, but it will be stretched vertically, making it appear narrower.

    d. What happens to the graph of the function if the value of b is changed from 4 to 6?

    The entire graph will shift up and to the right. As such, the axis of symmetry will move to the right and the vertex will move up and to the right.

    e. What does the c-value represent?

    The c-value represents the y-intercept, $(0, -9)$.