Lesson 2.1: Quadratic Functions Expressed in Vertex Form
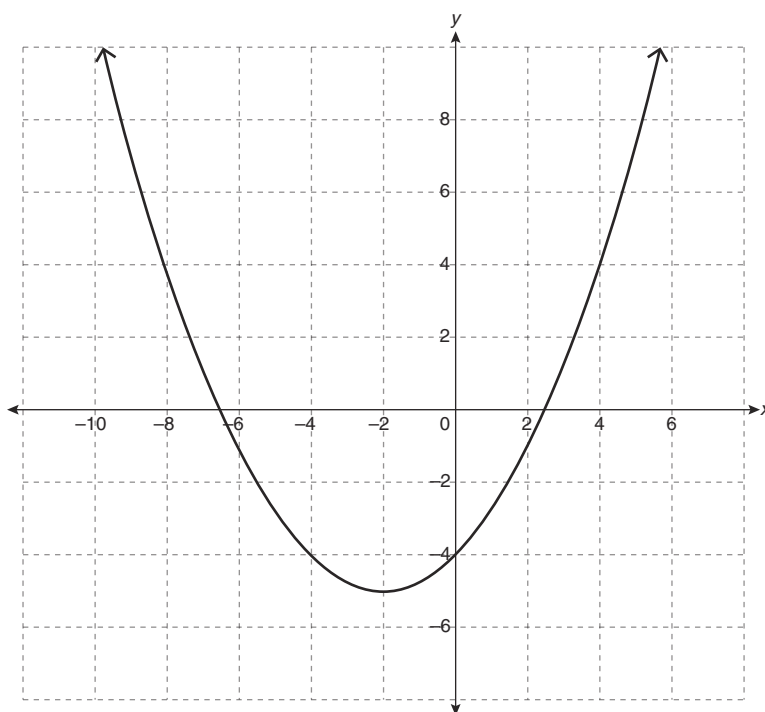
Complete the *Practice* below. When you have completed all the questions for *Lesson 2.1 Practice – II* with your best work, mark your work by first comparing your answers to the solutions provided in the *Appendix*. Then, apply the rubric found at the beginning of the *Workbook*.
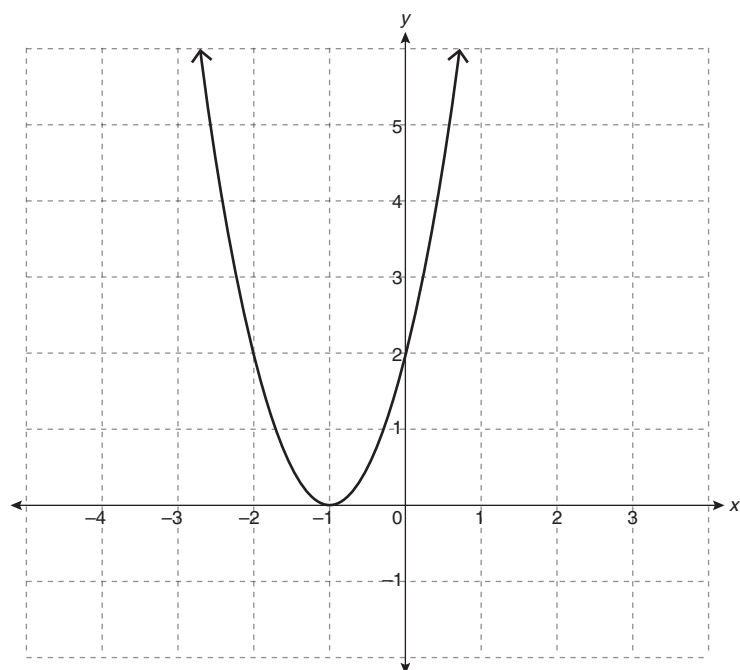
Practice – II

1. In vertex form, determine the equation of the following quadratic functions.

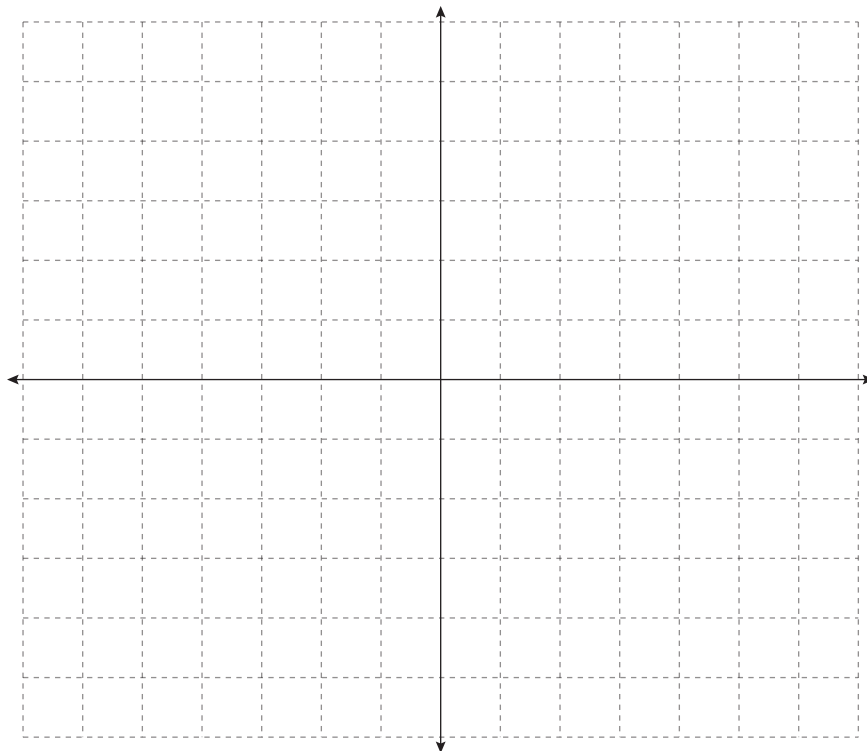   a.

b.

2. Sketch the graph of the function $f(x) = -(x+3)^2 + 4$. Be sure to label at least 5 points, including the vertex, x-intercept(s), and y-intercept, if applicable. Verify by using a graphing calculator.

3. A fountain has a spray that follows a quadratic trajectory. The water starts at 0.5 m above the ground, and reaches its peak at a height of 1.5 m, when it is 0.85 m away from its starting point.

   a. Draw a diagram of the fountain's spray, including known values.

   b. How far away from the starting point will the water be 0.5 m above the ground again?

   _____

   _____

   _____

   c. Write the equation of the function.

d. The water is supposed to land in a basin on the ground, 2 m away from the start. Does the spray hit the basin?

_____

_____

_____

_____

Mark your work for *Lesson 2.1 Practice – II* using the solutions provided in the *Appendix*. Then, apply the rubric found at the beginning of the *Workbook.*

Transfer your self-assessed mark to the front cover of the *Workbook.*

My self-assessed mark on *Lesson 2.1 Practice – II* is _____.

Reflect on your understanding of the concepts addressed in the *Practice* exercises in the table provided.
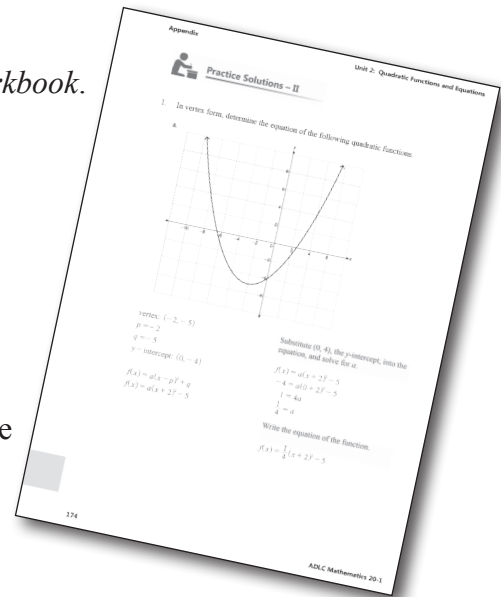
Question Number	Got it!	Almost there…	Need to retry or ask for help.	Similar questions from *Pre-Calculus 11*
1				p. 158 #8ad, 9bd
2				p. 157 #4bc
3				p. 159 #13, 16, 18

You may proceed to *Explore Your Understanding Assignment* on the next page of this *Workbook.*

Note: Before you complete *Explore Your Understanding*, you may review your skills and get more practice by completing the following problems in *Pre-Calculus 11*.

- Page 157, #1ac, 2, 3cd, 4bc, 5, 6, 7acd, 8ad, 9bd, 10, 11, 13, 16, and 18

Check your work in *Enhance Your Understanding*.