Chapter 3 Practice Test

Student Text Pages
176–177

Suggested Timing
80 min

Materials and Technology Tools
- grid paper

Related Resources
- BLM G–1 Grid Paper
- BLM 3–12 Chapter 3 Practice Test
- BLM 3–13 Chapter 3 Test
- BLM 3–14 Chapter 3 Practice Test Achievement Check Rubric

Summative Assessment

- **BLM 3-12 Chapter 3 Practice Test** provides a source for possible diagnostic assessment.
- After students complete **BLM 3–12 Chapter 3 Practice Test**, you may wish to use **BLM 3–13 Chapter 3 Test** as a summative assessment.

Accommodations

Gifted and Enrichment–have students write problems similar to **question 16** and challenge each other to solve them

Spatial–allow students to use a graphing calculator to solve problems involving quadratic functions

Using the Practice Test

This practice test can be assigned as an in-class or take-home assignment. If it is used as an assessment, use the following guidelines to help you evaluate the students.

Can students do each of the following?

- complete the square for quadratic equations with and without fractions
- use the quadratic formula to solve for x
- factor a quadratic expression
- solve a quadratic equation by factoring
- determine the key features (the vertex, the maximum or minimum, the equation of the axis of symmetry, the intercepts, and the range) of a quadratic function given its equation in standard form, vertex form, or factored form
- find the maximum height of a projectile, the time the projectile takes to hit the ground, and the time the projectile is higher than a set height
- determine the intervals for which a quadratic function is positive or negative, or increasing or decreasing
- determine an equation of a curve of best fit with and without technology

- **Question 16** is an Achievement Check question. Provide students with **BLM 3–14 Chapter 3 Practice Test Achievement Check Rubric** to help them understand what is expected.

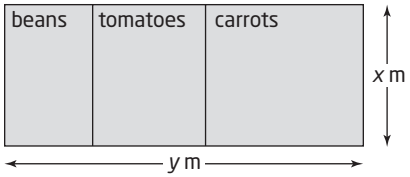
Study Guide

Use the following study guide to direct students who have difficulty with specific questions to appropriate examples to review.

Question	Section(s)	Refer to
1	3.1	Example 2 (page 127–128)
2	3.3	Example 1 (page 146–147)
3	3.2	Example 1 (page 136–137)
4	3.4	Example 1 (page 154–156)
5	3.1	Example 1 (page 125–127)
6	3.3	Example 2 (page 148–149)
7	3.2	Example 3 (page 138–141)
8	3.4	Examples 1, 2 (pages 154–157)
9	3.4	Example 3 (page 158–159)
10	3.5	Example 1 (page 165–166)
11	3.1	Example 4 (page 130–131)
12	3.2	Example 3 (page 138–141)
13	3.1	Example 3 (page 129)
14, 16	3.4	Examples 1, 3 (pages 154, 158)
15	3.5	Example 2 (page 166–168)

Achievement Check Sample Solution (page 177, question 16)

a)



The area of the garden is given by $A = xy$. There will be four lengths of fence, each x m long, and two lengths that are each y m long. The total length of fence is 140 m.

$4x + 2y = 140$ Rearrange this equation to isolate y.

$y = 70 - 2x$ Substitute $y = 70 - 2x$ into $A = xy$.

$A = x(70 - 2x)$

$= -2x^2 + 70x$ Complete the square to write the equation in vertex form.

$= -2(x^2 - 35x + 306.25) + 612.5$

$= -2(x - 17.5)^2 + 612.5$

The maximum possible area of Colette's garden is 612.5 m^2.

b) The dimensions of the garden with maximum area are 17.5 m wide by 35 m long.

c) The dimensions of the three sections of garden need not be equal. The same length of fencing is needed to divide the length of the garden regardless of where along the length the fence is situated.