

Chapter 3 Review

Student Text Pages

174–175

Suggested Timing

80 min

Materials and Technology Tools

- graphing calculators
- grid paper

Related Resources

- BLM G–1 Grid Paper
- BLM 3–10 Chapter 3 Review

Accommodations

Visual—provide students with an enlarged photocopy of the graph for **question 9**

Motor—encourage students to work with a partner when using a graphing calculator

Memory—encourage students to use cue cards to remember the different forms of a quadratic equation

Ongoing Assessment

- Upon completing the Chapter 3 Review, students can also answer questions such as the following:
 - What questions did you find easy? Difficult? Why?
 - How often did you have to check the related worked example in the textbook to help you with the questions? For which questions?

Using the Chapter Review

- This Chapter Review is organized by sections and is designed to review different skills and concepts in this chapter.
- Supply students with **BLM G–1 Grid Paper** for graphing.
- Students might work independently to complete the Chapter 3 Review, then in pairs to compare solutions.
- Alternatively, the Chapter 3 Review could be assigned for reinforcing skills and concepts in preparation for the Practice Test. Provide an opportunity for students to discuss any questions containing strategies or questions with features that they find difficult.
- After students complete the Chapter 3 Review, encourage them to make a list of questions that caused them difficulty, and include the related sections and teaching examples. They can use this to focus their studying for a final test on the chapter's content.
- You may wish to use **BLM 3–10 Chapter 3 Review** for extra review or remediation.

Chapter 3 Problem Wrap-Up

Student Text Page

175

Suggested Timing

40 min

Materials and Technology Tools

- computers with Internet access

Related Resources

- BLM 3–11 Chapter 3 Problem Wrap-Up Rubric

Accommodations

Gifted and Enrichment–

challenge students to further research the design and construction of model rockets and share their new knowledge with their classmates

Language—allow students to respond verbally to the Chapter Problem Wrap-Up

Summative Assessment

- Use **BLM 3–11 Chapter 3 Problem Wrap-Up Rubric** to assess student achievement.

Using the Chapter Problem

- Students may need to refer to their answers to the chapter problem questions in sections 3.1, 3.2, 3.4, and 3.5. You may wish to book time in the computer lab so students can research rockets and projectile motion in order to draft an answer to the question “Is a maximum height of 45 m feasible?” As an extension, you may wish to work together with the science department to implement this as a real life challenge for your students.

Level 3 Notes

- Student demonstrates understanding of quadratic functions and what it means to find the maximum or minimum value.
- Student demonstrates understanding of problem solving techniques.
- Student uses mathematical language effectively.
- Student’s solution is clearly organized and choices are justified.
- Student makes minor errors.
- Student gives a clear and well-supported statement as to whether or not it is feasible for a model rocket to reach a maximum height of 45 m.

Level 3 Sample Response

- a) The equation of the quadratic function for the record holder’s data could have been derived from a quadratic regression on the data. Then, by comparing the equations and their graphs, the vertices and therefore, the maximum height each rocket could reach could be determined.
- b) Answers may vary. A height of 45 m for a model rocket is not reasonable.

What Distinguishes Level 2

- Student demonstrates some understanding of quadratic functions and what it means to find the maximum or minimum value.
- Student demonstrates some understanding of problem solving techniques.
- Student uses mathematical language somewhat effectively.
- Student’s solution is somewhat organized and choices are partially or ineffectively justified.
- Student makes some significant errors.
- Student gives a somewhat clear and partially-supported statement as to whether or not it is feasible for a model rocket to reach a maximum height of 45 m

What Distinguishes Level 4

- Student demonstrates thorough understanding of quadratic functions and what it means to find the maximum or minimum value.
- Student demonstrates thorough understanding of problem solving techniques.
- Student uses mathematical language highly effectively.
- Student’s solution is highly organized and choices are clearly justified.
- Student makes very few or no errors.
- Student gives a very clear, concise and thoroughly-supported statement as to whether or not it is feasible for a model rocket to reach a maximum height of 45 m.