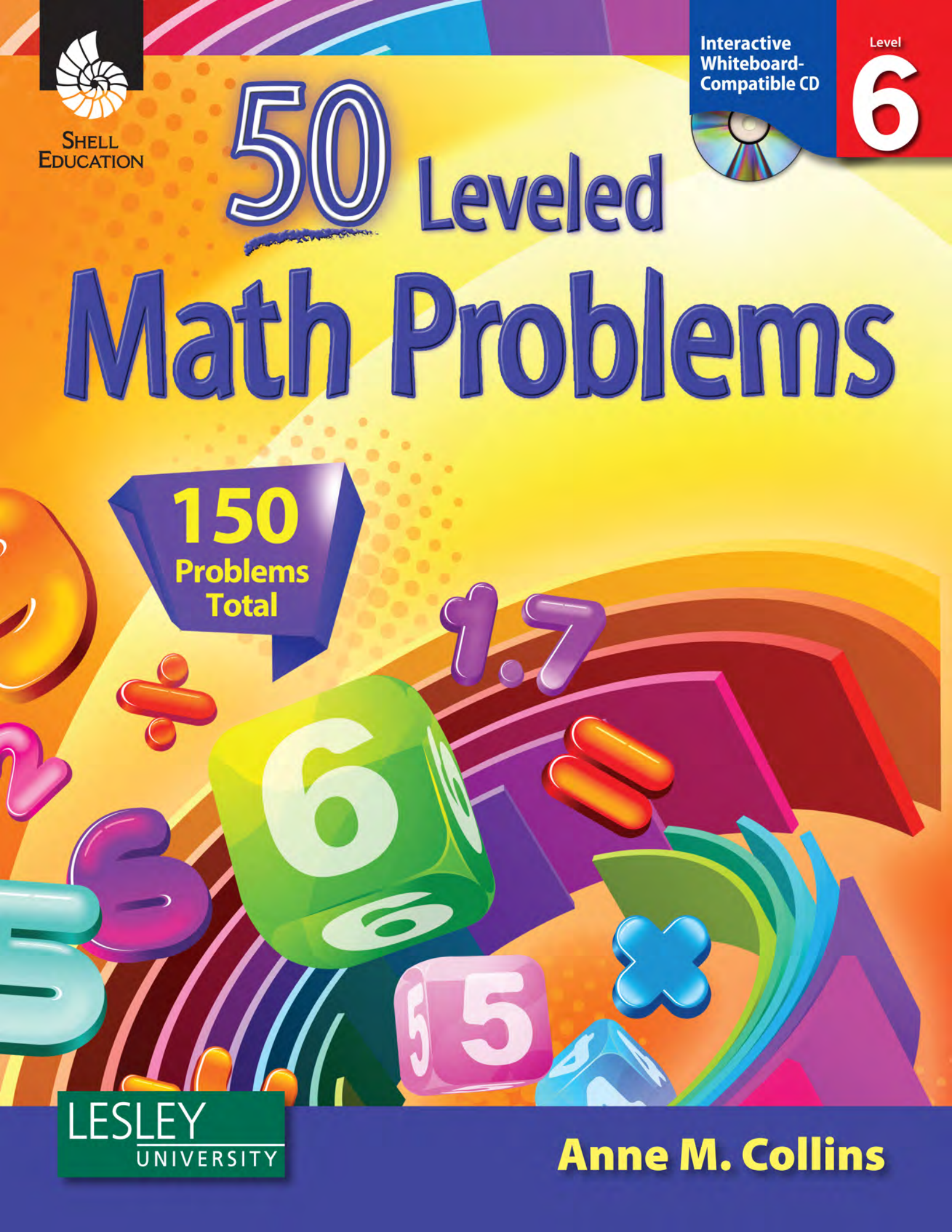
Shell Education
Interactive Whiteboard-Compatible CD
Level 6
50 Leveled Math Problems
150 Problems Total
LESLEY UNIVERSITY
Anne M. Collins

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Coordinate Graphing

Standard

Uses the rectangular coordinate system to model and to solve problems

Overview

Students demonstrate an understanding of the coordinate plane, the locations of the four quadrants, the signs of ordered pairs located within each quadrant, and the concept of intercepts.

Problem-Solving Strategies

- Act it out or use manipulatives
- Organize information in a picture, list, table, graph, or diagram

Materials

- *Coordinate Graphing* (page 61; coordinategraphing.pdf)
- *Coordinate Plane* (coordinateplane.pdf)
- *Student Response Form* (page 132; studentresponse.pdf) *(optional)*

Activate

1. Distribute copies of *Coordinate Plane* to students and project it for the class to see.
2. Guide students in labeling the following terms on their individual coordinate grids: *Quadrant I, Quadrant II, Quadrant III, Quadrant IV, origin, x-axis,* and *y-axis*.
3. Invite several volunteers to demonstrate where various points should be plotted. Be sure to include intercepts, such as (0, –3) and (7, 0).

Solve

1. Distribute copies of *Coordinate Graphing* to students. Have students work alone.
2. As students are working, ask them if they can tell by looking at the ordered pairs in which quadrant the points will lie.

Debrief

1. How are the points in Quadrants I and II related? What about III and IV?
2. How do you know which number in the ordered pair to look at first?

Differentiate △

Challenge students to experiment with graphing different orientations of geometric figures in related quadrants. For example, ask *How might a rectangle graphed in Quadrant II look in Quadrant IV if the rectangle has the same dimensions and is positioned the same distance away from each axis?*

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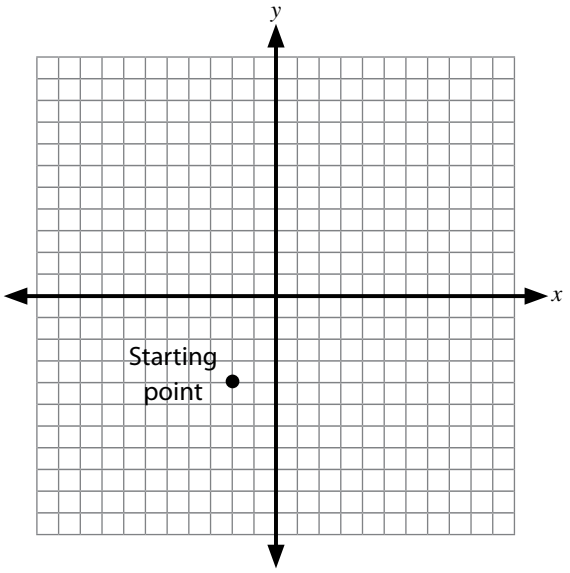
Coordinate Graphing ○

Cedric is taking a city tour. The tour starts at the Public Commons, which is located at (–2, –4) and begins by walking three blocks west (left). After pausing to visit a monument, the group continues to walk seven blocks north (up), where they visit a historical cemetery. Then, they walk six blocks to the east (right) where they stop at a historical café for lunch.

How many blocks has the group walked when they stop to eat?

Represent the city tour on a coordinate plane.

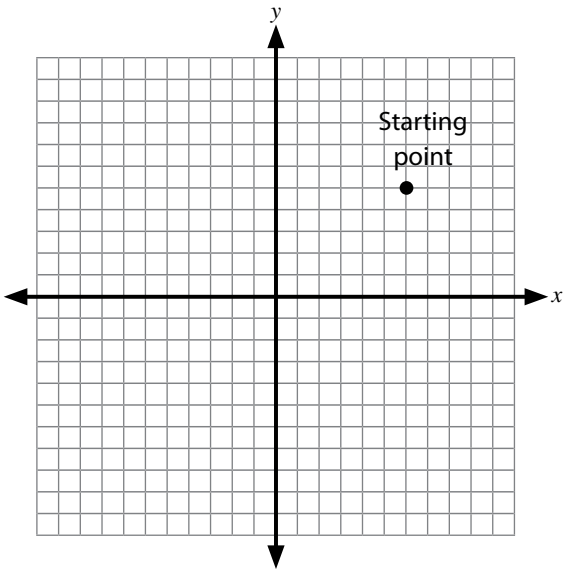


Coordinate Graphing □

The expression below represents the route Emma took on her weekend bicycle trip. When she traveled west or south, she marked the distances as negative miles. When she went east or north, she recorded the distances as positive miles. She never retraced the same path. She stayed on roadways (grid lines) the whole way.

$-3 + 5 + 4 - 6 - 3$

If each grid mark is one mile, how many miles did Emma ride? Trace the route you think she took.



Coordinate Graphing △

Abby is running errands around town. She starts at the origin and travels north, south, east, and west. If she traveled a total of 62 blocks (on grid lines) and made 5 stops, where might she have stopped? Plot your points on the coordinate plane.