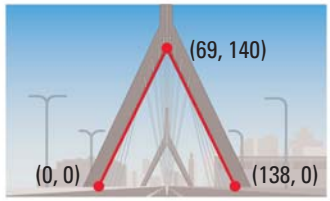
39. **ENGINEERING** The Leonard P. Zakim Bunker Hill Bridge spans the Charles River in Boston. The bridge is suspended from two towers. Each tower has the dimensions shown. Write an absolute value function that represents the inverted V-shaped portion of a tower.



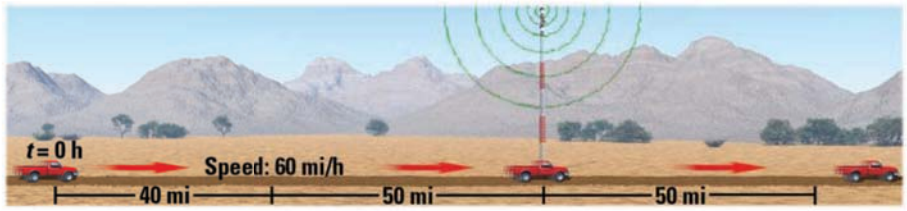
40. **TAKS REASONING** A snowstorm begins with light snow that increases to very heavy snow before decreasing again. The snowfall rate r (in inches per hour) is given by $r(t) = -0.5|t - 4| + 2$ where t is the time (in hours).

a. Graph Graph the function.

b. Interpret When is the snowfall heaviest? What is the maximum snowfall rate? How are your answers related to the function's graph?

c. Extend The total snowfall is given by the area of the triangle formed by the graph of $r(t)$ and the t-axis. What is the total snowfall?

41. **MULTIPLE REPRESENTATIONS** The diagram shows a truck driving toward a radio station transmitter that has a broadcasting range of 50 miles.



a. Making a Table Make a table that shows the truck's distance d (in miles) from the transmitter after $t = 0$, 0.5, 1, 1.5, 2, 2.5, and 3 hours.

b. Drawing a Graph Use your table from part (a) to draw a graph that shows d as a function of t.

c. Writing an Equation Write an equation that gives d as a function of t. During what driving times is the truck within range of the transmitter?

42. **CHALLENGE** A hiker walks up and down a hill. The hill has a cross section that can be modeled by $y = -\frac{4}{3}|x - 300| + 400$ where x and y are measured in feet and $0 \le x \le 600$. How far does the hiker walk?

MIXED REVIEW FOR TAKS

TAKS PRACTICE at classzone.com

REVIEW Lesson 1.2; TAKS Workbook

43. **TAKS PRACTICE** Which expression is equivalent to $12(n^2 + n) - 5(n^2 + 3n - 2)$? *TAKS Obj. 2*

(A) $-7n^2 + 3n - 10$ (B) $7n^2 - 3n + 10$

(C) $17n^2 + 27n - 10$ (D) $17n^2 - 13n + 10$

REVIEW TAKS Preparation p. 324; TAKS Workbook

44. **TAKS PRACTICE** In the figure shown, what is the length of $\overline{YX}$ in inches? *TAKS Obj. 6*

(F) 20 in. (G) 36 in.

(H) 56 in. (J) 3136 in.