75. **SOCCER** The path of a soccer ball kicked from the ground can be modeled by

$$y = -0.0540x^2 + 1.43x$$

where x is the horizontal distance (in feet) from where the ball was kicked and y is the corresponding height (in feet).

a. A soccer goal is 8 feet high. Write and solve an inequality to find at what values of x the ball is low enough to go into the goal.

b. A soccer player kicks the ball toward the goal from a distance of 15 feet away. No one is blocking the goal. Will the player score a goal? *Explain* your reasoning.

76. **MULTI-STEP PROBLEM** A truck that is 11 feet tall and 7 feet wide is traveling under an arch. The arch can be modeled by

$$y = -0.0625x^2 + 1.25x + 5.75$$

where x and y are measured in feet.

ENTRANCE

a. Will the truck fit under the arch? *Explain* your reasoning.

b. What is the maximum width that a truck 11 feet tall can have and still make it under the arch?

c. What is the maximum height that a truck 7 feet wide can have and still make it under the arch?
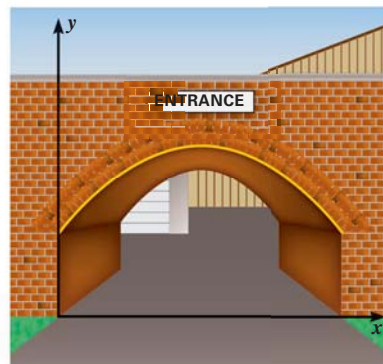
77. **CHALLENGE** For clear blue ice on lakes and ponds, the maximum weight w (in tons) that the ice can support is given by

$$w(x) = 0.1x^2 - 0.5x - 5$$

where x is the thickness of the ice (in inches).

a. **Calculate** What thicknesses of ice can support a weight of 20 tons?

b. **Interpret** *Explain* how you can use the graph of $w(x)$ to determine the minimum x-value in the domain for which the function gives meaningful results.

MIXED REVIEW FOR TAKS

78. ⬇ **TAKS PRACTICE** Rachel is a cross-country runner. Her coach recorded the data shown at the right during a timed practice run. If Rachel continues to run at the same rate, what is the approximate distance she will run in 25 minutes? *TAKS Obj. 3*

Time (minutes)	Distance (kilometers)
6	1.2
12	2.4
15	3

Ⓐ 4.2 km   Ⓑ 5 km

Ⓒ 6 km   Ⓓ 10 km

79. ⬇ **TAKS PRACTICE** Which set of dimensions corresponds to a pyramid similar to the one shown? *TAKS Obj. 8*

Ⓕ $w = 1$ unit, $\ell = 2$ units, $h = 4$ units

Ⓖ $w = 2$ units, $\ell = 3$ units, $h = 6$ units

Ⓗ $w = 3$ units, $\ell = 4$ units, $h = 8$ units

Ⓙ $w = 4$ units, $\ell = 6$ units, $h = 12$ units

$h = 24$

$\ell = 12$

$w = 9$