

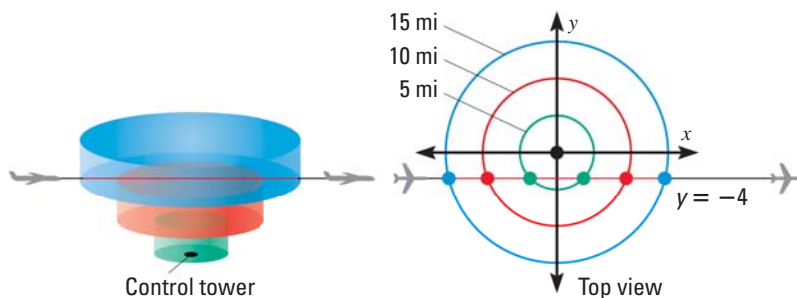
64. **TAKS REASONING** An appliance store claims to provide free delivery up to 100 miles from the store. The following points represent the locations of houses, with the origin representing the store. (All coordinates are in miles.) Which house is located outside the free delivery area?

(A) (95, 30) (B) (90, 35) (C) (80, 55) (D) (75, 70)

EXAMPLE 5

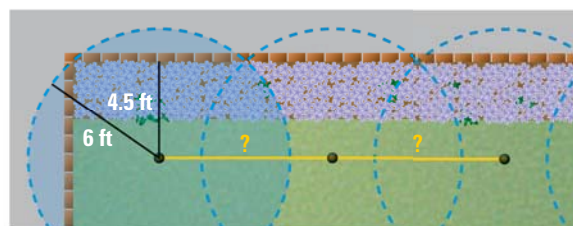
on p. 628
for Exs. 65–67

65. **MULTI-STEP PROBLEM** “Class B” airspace sometimes consists of a stack of cylindrical layers as shown. Seen from above, the airspace forms circles whose origin is the control tower. A plane in straight and level flight flies through the top layer along the line $y = -4$, as shown.



- For how many miles will the plane be in the top-most layer of Class B airspace?
 - For how many miles will the plane be above the middle layer of Class B airspace?
 - For how many miles will the plane be above the lowest layer of Class B airspace?
66. **TAKS REASONING** A circular utility tunnel 8 feet in diameter has a 6-foot-wide walkway across its bottom. Could a worker who is 6 feet 2 inches tall walk down the center of the walkway without ducking? *Explain.* (Hint: Write an equation of the tunnel’s cross section. Find the x -coordinate of an endpoint of the walkway and substitute to find the y -coordinate.)

67. **GROUNDKEEPING** A row of sprinklers is to be installed parallel to and 4.5 feet away from the back edge of a flower bed. Each sprinkler waters a region with a 6 foot radius. How far apart should the sprinklers be placed to water the entire flower bed with the least possible overlap in coverage, as shown?



68. **MULTIPLE REPRESENTATIONS** The Modified Mercalli Intensity Scale rates an earthquake’s “shaking strength.” In general, the rating decreases as distance from the earthquake’s epicenter increases. Suppose an earthquake has a Mercalli rating of 6.0 at its epicenter, a 5.7 rating 15 miles away from the epicenter, a 5.4 rating 25 miles away, and a 5.1 rating 35 miles away.
- Drawing Graphs** Represent the situation described above using circles in a coordinate plane.
 - Writing Inequalities** For each circle from part (a), write an inequality describing the coordinates of locations with a Mercalli rating *at least* as great as the Mercalli rating represented by the circle.
 - Making a Prediction** What can you predict about the Mercalli rating 12 miles west and 16 miles south of the epicenter? *Explain.*