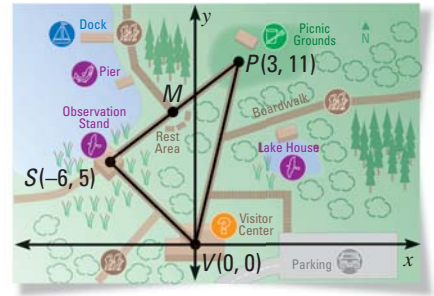


**EXAMPLE 3**

on p. 615  
for Ex. 53

- 53. MULTI-STEP PROBLEM** The diagram shows part of a trail system at a nature preserve. Each unit represents 0.1 mile. Suppose that you go from the visitor center  $V$  to the observation stand  $S$ , and then take a break at  $M$ , halfway between the observation stand and the picnic area  $P$ .



- What are the coordinates of  $M$ ?
- What is the total distance traveled from  $V$  to  $M$ ?
- What is the distance from  $M$  back to  $V$  through  $P$ ?

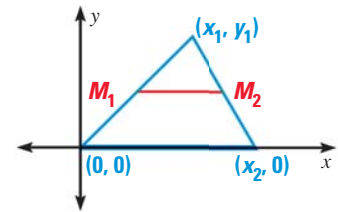
**EXAMPLE 5**

on p. 616  
for Exs. 54–55

- 54. ARCHAEOLOGY** While on an archaeological dig, you uncover a piece of a circular dish. You lay the piece on a coordinate plane and mark three points on the dish's edge at  $(-4, 2)$ ,  $(0, 0)$ , and  $(6, 4)$  where each unit represents 1 inch. What was the original diameter of the dish?

- 55. METEOR CRATERS** Five meteor craters are clustered together near Odessa, Texas. Three points on the edge of the circular main crater can be represented by  $(-220, 220)$ ,  $(0, 0)$ , and  $(200, 40)$  where each unit represents 1 foot. What is the diameter of the crater to the nearest 10 feet?

- 56. TAKS REASONING** You are ordering a triangular sail for your sailboat. When you get the sail, you plan to sew a thin decorative strip connecting the midpoints  $M_1$  and  $M_2$  of two sides of the sail, as shown in the diagram.



- Write expressions for the coordinates of  $M_1$  and  $M_2$ .
- Write a simplified expression for the length of the strip. *Compare* this length with the length of the sail's base.
- Do your results from part (b) depend upon the shape of the triangular sail? *Explain*.

- 57. CHALLENGE** At time  $t = 0$ , a car begins traveling east at 60 miles per hour from a point 100 miles west and 40 miles north of a radio tower. The tower has a transmission range of 50 miles. Use the distance formula to find the times  $t$  during which the car is in range of the tower.

**MIXED REVIEW FOR TAKS**

**TAKS PRACTICE** at classzone.com

**REVIEW**

Lesson 4.4;  
TAKS Workbook

- 58. TAKS PRACTICE** What are the  $x$ -intercepts of the graph of the function  $y = 3x^2 - 12x - 15$ ? **TAKS Obj. 5**

- (A)  $x = -1, x = 5$                       (B)  $x = -5, x = 1$   
(C)  $x = -5, x = \frac{1}{3}$                       (D)  $x = -1, x = \frac{5}{3}$

**REVIEW**

TAKS Preparation  
p. 544;  
TAKS Workbook

- 59. TAKS PRACTICE** What is the approximate surface area of the three-dimensional figure represented by the net shown? **TAKS Obj. 7**

- (F)  $221 \text{ in.}^2$                       (G)  $243 \text{ in.}^2$   
(H)  $324 \text{ in.}^2$                       (J)  $405 \text{ in.}^2$

