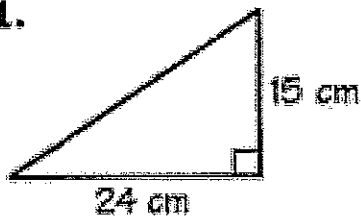


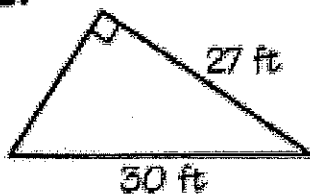
Find the missing side length, if possible.

1.



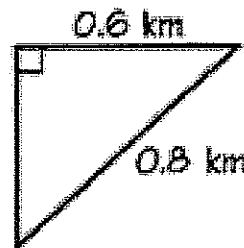
$$15^2 + 24^2 = \sqrt{801} = \boxed{28.3 \text{ cm}}$$

2.



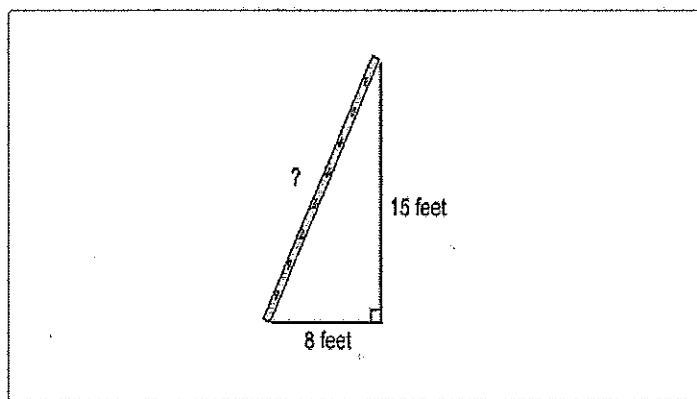
$$30^2 - 27^2 = \sqrt{171} = \boxed{13.1 \text{ ft}}$$

3.



$$0.8^2 - 0.6^2 = \sqrt{0.28} = \boxed{0.53 \text{ km}}$$

4. Steven uses a ladder to change the bulb in the floodlight on the front of his house, because it is 15 feet above the ground. He needs to place the end of the



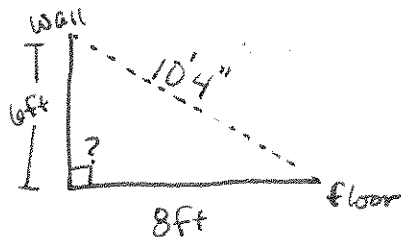
ladder 8 feet away from the house so that he does not crush the flowers in his flower bed.

How tall must his ladder be to reach the height of the floodlight?

- A. 13 feet
- B. 15 feet
- C. 17 feet
- D. 19 feet

$$15^2 + 8^2 = \sqrt{289} = 17$$

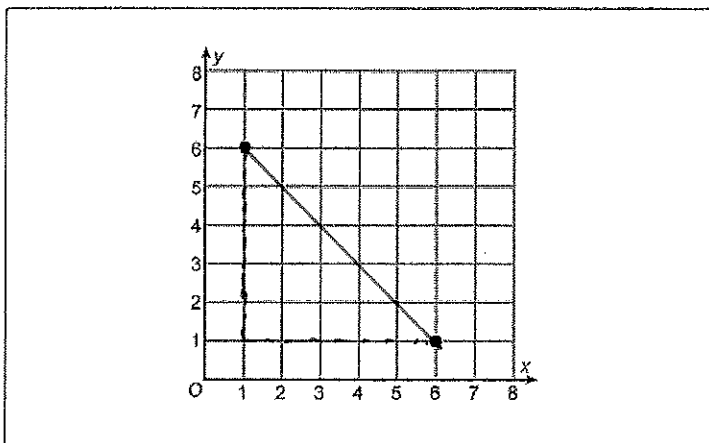
5. John is building a house, and to check whether the walls are at a right angle to the floor, he makes a mark with a pencil 6 feet up the wall. He then makes a mark 8 feet from the wall. When he measures the distance between the marks with his measuring tape, he gets a reading of 10 feet 4 inches. Does the wall form a right angle to the floor? Explain why or why not.



$$6^2 + 8^2 = \sqrt{100} = 10$$

NO the wall does not form a right angle. The reading should be exactly 10 ft.

6. Look at the two points in the coordinate plane. Which answer choice is closest to the distance between the two points?



A. 5 units

B. 6 units

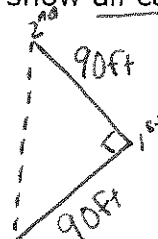
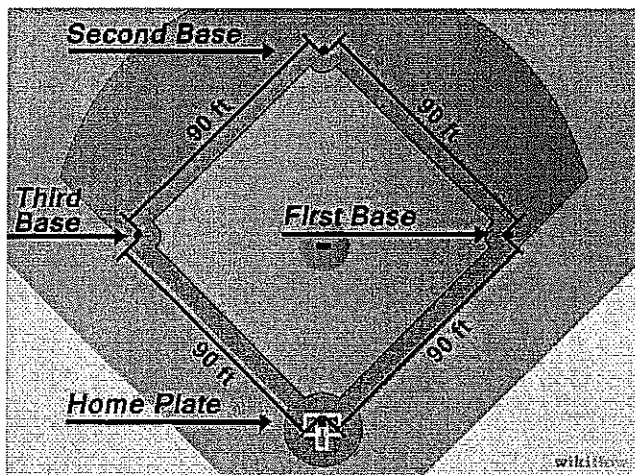
**C. 7 units**

D. 8 units

$$5^2 + 5^2$$

$$\sqrt{50} = 7.1$$

7. Looking at the diagram of the baseball field below, how far must Horace, who is behind home plate, throw the baseball to get Sally out at second base? Explain how you found your answer and be sure to show all calculations.



$$90^2 + 90^2$$

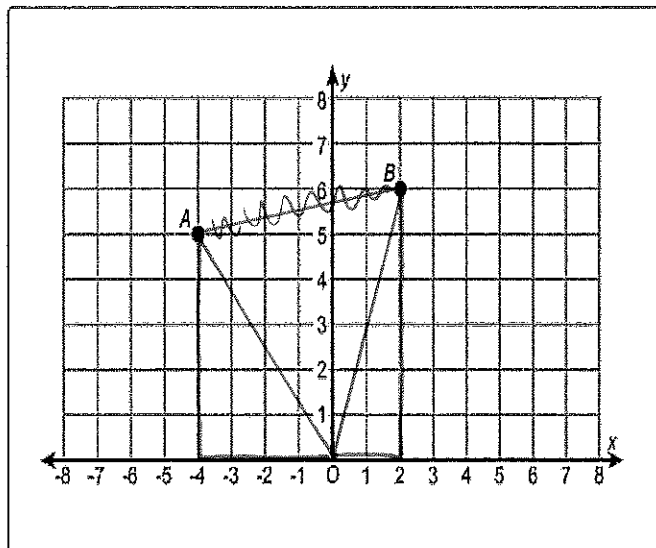
$$= \sqrt{16200}$$

$$= \boxed{127.3 \text{ ft}}$$

I made a right triangle, using the distance between the bases as the legs, and the distance from home to 2<sup>nd</sup> the hypotenuse. Then I used the Pythagorean theorem to solve.

8. Locate points *A* and *B* in the coordinate plane below. Use the Pythagorean Theorem to find the straight-line distance of each point to the origin (0, 0).

Which point is closer to the origin, and by how much?



**A.** *A* is closer than *B* by less than 0.1 unit.

**B.** *A* is closer than *B* by more than 0.1 unit.

**C.** *B* is closer than *A* by less than 0.1 unit.

**D.** *B* is closer than *A* by more than 0.1 unit.

① Point *A*  
 $5^2 + 4^2$

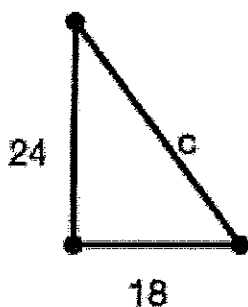
$\sqrt{41} = 6.40$

② Point *B*  
 $6^2 + 2^2$

$\sqrt{40} = 6.32$

③  $\begin{array}{r} 6.40 \\ -6.32 \\ \hline 0.08 \end{array}$

9. What is the length of the missing side length, *c*, of the right triangle below?



A. 26

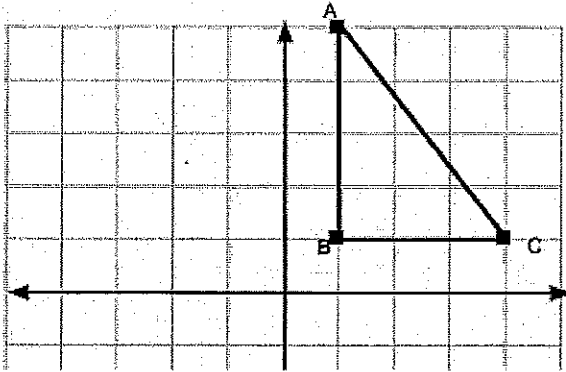
**B.** 30

C. 32

D. 36

$24^2 + 18^2$   
 $= \sqrt{900} = 30$

10. Which statements are true about the triangle below? *Select all that apply.*



- A. The triangle is not a right triangle.
- B. Sides AB and BC are the legs of the triangle.
- C. The area of the triangle is 24 square units.
- D. Side AC is the hypotenuse of the triangle.
- E. The angle formed by sides AC and BC is acute.

Acute - angle less than  $90^\circ$