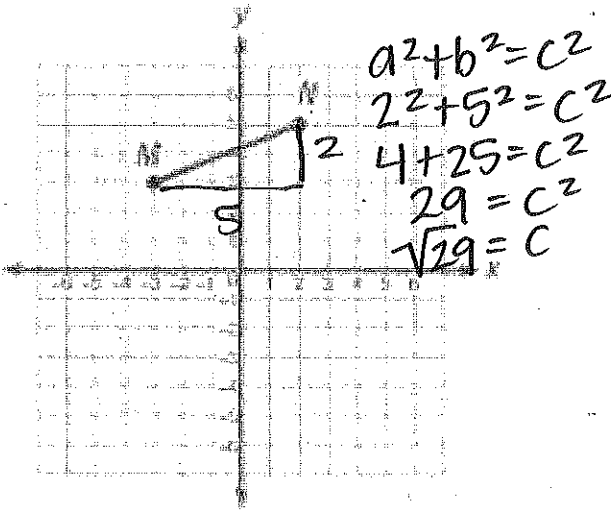


8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

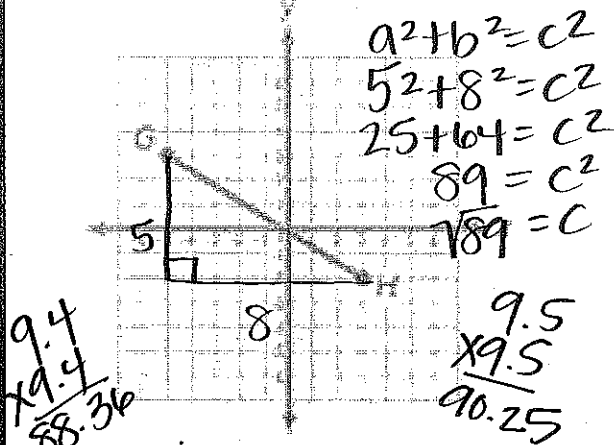
Below is a graph of line segment MN .



What is the length of line segment MN ?

- A. 2 B. $\sqrt{5}$ C. 5 **D. $\sqrt{29}$**

What is the length of line segment GH rounded to the nearest tenth?

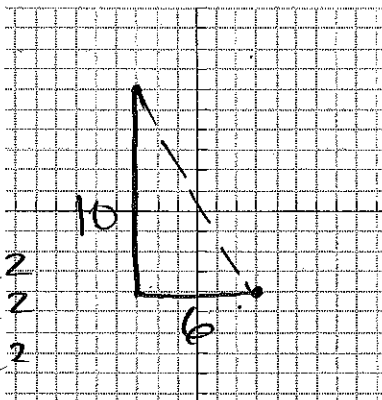


- A. 9.4 units** B. 9.5 units
C. 13 units D. 44.5 units

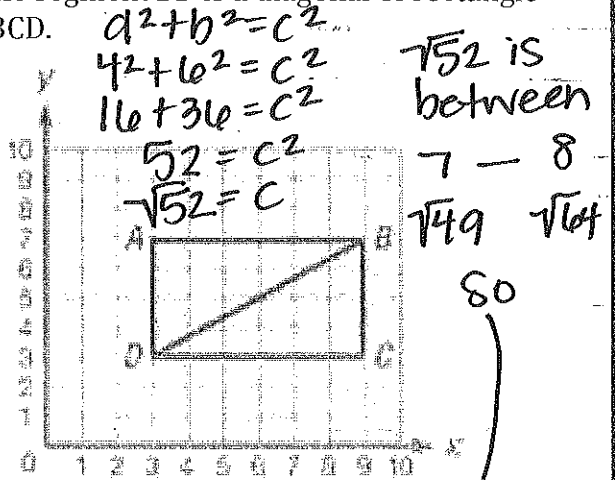
A line segment is drawn on a coordinate plane. The endpoints of the line segment are $(-3, 6)$ and $(3, -4)$. What is the length of the line segment?

- A. $\sqrt{40}$ units
B. 8 units
C. $\sqrt{136}$ units
D. 16 units

$6^2 + 10^2 = c^2$
 $36 + 100 = c^2$
 $136 = c^2$
 $\sqrt{136} = c$



Line segment BD is a diagonal of rectangle $ABCD$.

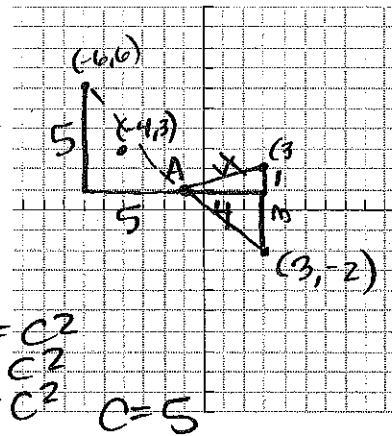


What is the length of line segment BD to the nearest tenth?

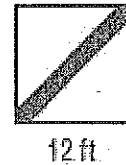
- A. 2.3 B. 4.4 C. 6.2 **D. 7.2**

The shortest distance between point A and point B on a coordinate plane is 5 units. The ordered pair $(-1, 1)$ describes the location of point A . Which ordered pair could describe the location of point B ?

- A. $(-6, 6)$
B. $(-4, 3)$
C. $(3, -2)$
D. $(11, -12)$



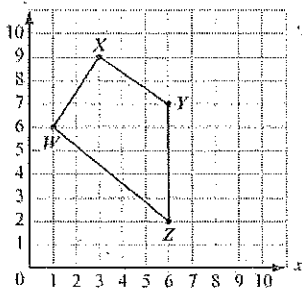
Mr. Harper designed a vegetable garden in the shape of a square. He plans to build a walkway through the garden, as shown below. What is the approximate length of the walkway?



- A. 13 ft **B. 17 ft** C. 24 ft D. 33 ft

8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

Quadrilateral WXYZ is shown on the coordinate plane. What is the length, to the nearest unit, of diagonal XZ?

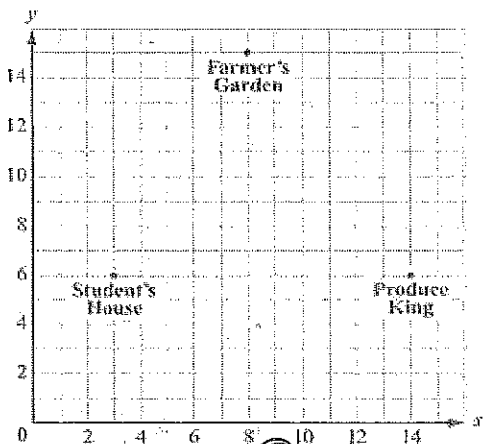


- A) 8
- B) 10
- C) 12
- D) 14

Ryan's house lies 6 miles due east of Adrian's house. Adrian's house is 8 miles due south of Frank's house. What is the shortest distance from Frank's house to Ryan's house?

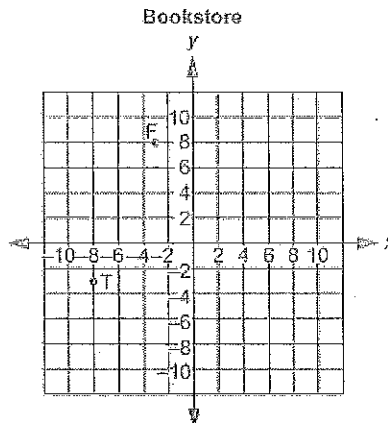
- A) 8
- B) 10
- C) 20
- D) 24

The locations of a student's house and two markets are shown on this coordinate plane. Each unit represents one mile. To the nearest 0.1 mile, how much closer is Farmer's Garden than Produce King to the student's house?



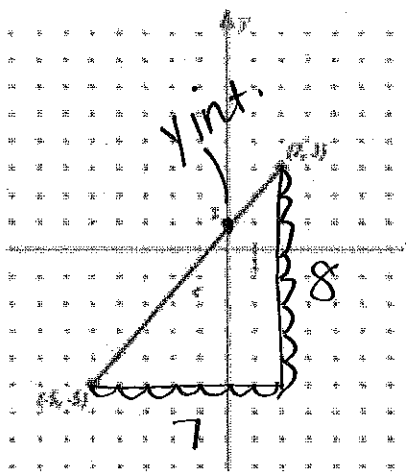
- A) 0.4 mile
- B) 0.7 mile
- C) 1.8 miles
- D) 2.9 miles

Stanley marked two points on the grid below to show the locations of the fiction section, point F, and the travel section, point T, in a bookstore. What is the shortest distance, in units, between the fiction section and the travel section in the bookstore? **Pay attention to your intervals* ☺



- A) $\sqrt{146}$
- B) $\sqrt{242}$
- C) 16
- D) 25

A city planner uses a grid to show points P and Q.



Part A: The city planner wants to know the distance between P and Q. Find the distance, in units, between P and Q. Show your work and explain your answer.

$$a^2 + b^2 = c^2$$

$$7^2 + 8^2 = c^2$$

$$49 + 64 = c^2$$

$$113 = c^2$$

$$c = \sqrt{113}$$

$$c \approx 10.6$$

Part B: What is the equation of the line including points P and Q? Show your work and explain your answer.

$$\frac{\text{rise}}{\text{run}} = \text{slope} = \frac{8}{7}$$

$$b = 1$$

$$y = \frac{8}{7}x + 1$$