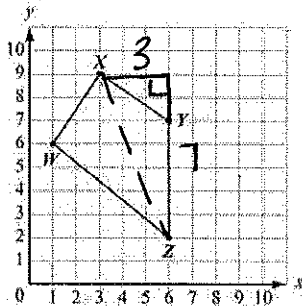


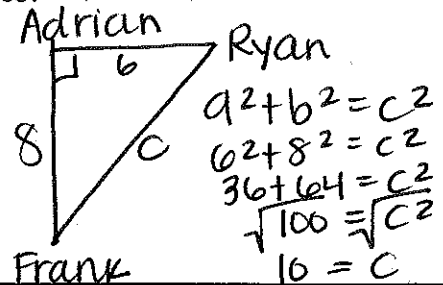
8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

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



(A) 8 $a^2 + b^2 = c^2$
 $7^2 + 3^2 = c^2$
 $49 + 9 = c^2$
 $\sqrt{58} = \sqrt{c^2}$
 $c = \sqrt{58}$
 $c \approx 8$

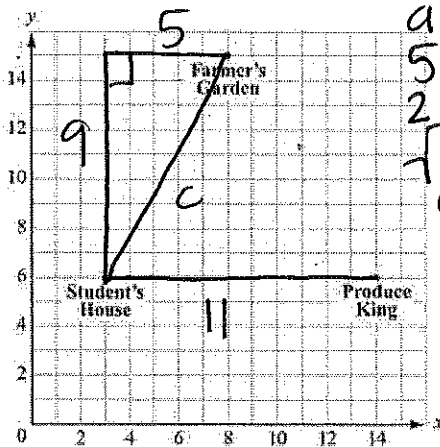
Ryan's house lies 6 miles due east of Adrian's house. Adrian's house is 8 miles due south of Frank's house. What is the shortest distance from Frank's house to Ryan's house?



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

$a^2 + b^2 = c^2$
 $6^2 + 8^2 = c^2$
 $36 + 64 = c^2$
 $\sqrt{100} = \sqrt{c^2}$
 $10 = c$

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

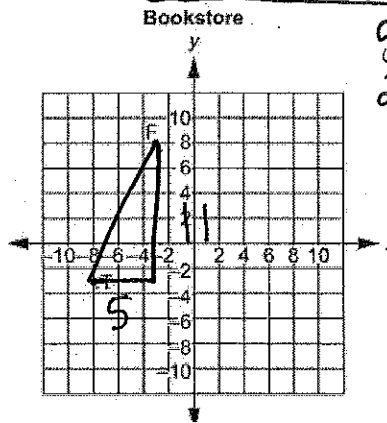


$a^2 + b^2 = c^2$
 $5^2 + 9^2 = c^2$
 $25 + 81 = c^2$
 $\sqrt{106} = \sqrt{c^2}$
 $c = \sqrt{106}$
 $c \approx 10.3$
 $11 - 10.3 = 0.7$

Produce King to the student's house?

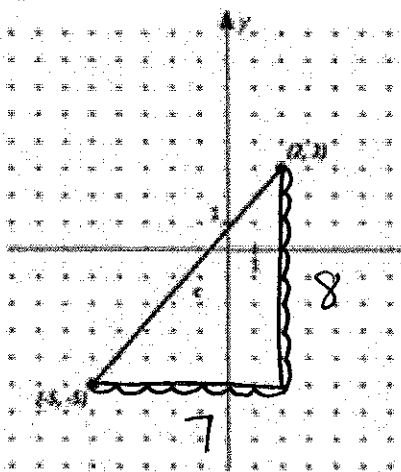
- A) 0.4 mile
 (B) 0.7 mile
 C) 1.8 miles
 D) 2.9 miles

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!*



$5^2 + 11^2 = c^2$
 $25 + 121 = c^2$
 $146 = c^2$
 (A) $\sqrt{146}$ $\sqrt{146} = c$
 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.

$a^2 + b^2 = c^2$
 $7^2 + 8^2 = c^2$
 $49 + 64 = c^2$
 $\sqrt{113} = \sqrt{c^2}$
 $c = \sqrt{113}$

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

$b = 1$ (I can tell from graph)
 & Slope (m) = $\frac{8}{7}$ so
 $y = \frac{8}{7}x + 1$