1) A triangle has vertices at: (6, -3), (0, 4), (8, -1). Using the distance formula, find the lengths of the sides of the triangle and its perimeter.

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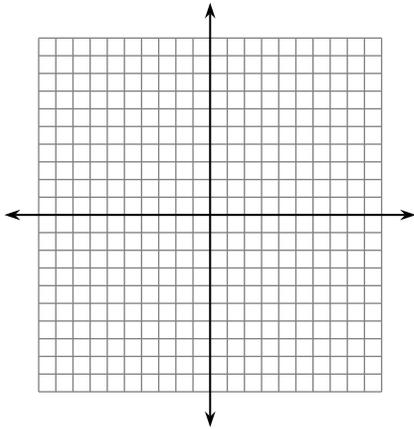
Perimeter = _____

2) Two brothers are at the park which is positioned at (-1, 3). The older brother decides to go home. The younger brothers travels to a friend's house and then home. The friend's house is located at (9, 3) and home is located at (9, -11). (Note: one unit is one mile)
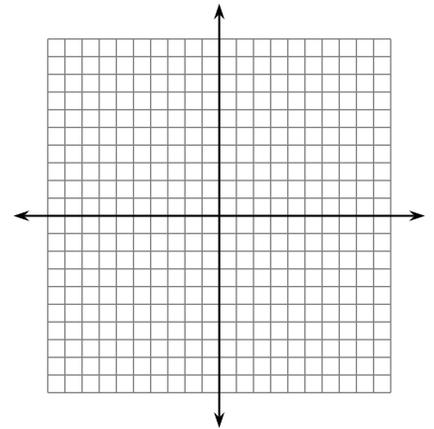
   a. Who will get home first if they travel at the same speed? Explain why.
   b. How many fewer miles did the brother who arrived first from part (a) travel?
   c. If the person that gets home first is walking at 3 miles per hour, how long will it take that person to arrive?

3) A quarterback throws a football from a position that is 10 yards from the goal line and 15 yards from the sideline. His receiver catches it at a position that is 50 yards from the same goal line and 5 yards from the same sideline. Find the distance of the throw.

4) Caroline traces out the spiral shown in the figure. The spiral begins at the origin. What is the shortest distance between Caroline's starting point and her ending point?
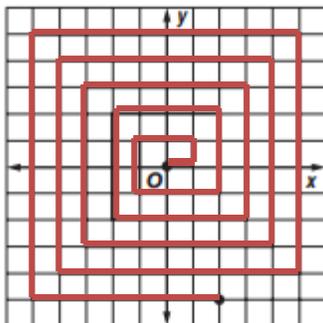
5) The United States Capitol is located 800 meters south and 2300 meters to the east of the White House. If the locations were placed on a coordinate grid, the White House would be at the origin. What is the distance between the Capitol and the White House? Round your answer to the nearest meter.

6) On a map's coordinate grid, Smithtowne is located at (1, 3) and Kipville is located at (4, 9). How long is the train's route as it travels along a straight line from Smithtowne to Kipville? (One map unit equals one mile.)

7) Coach Alvarado drew his football team's next play on a coordinate grid. He placed Kaleem at (1, 3). He will be passing the ball to Jeremy at (-6, 3). What is the distance, in yards, of the pass from Kaleem to Jeremy?

8) Snooker is a kind of pool or billiards played on a 6-foot-by-12-foot table. The side pockets are halfway down the rails (long sides).
    a) Find the distance, to the nearest tenth of a foot, diagonally across the table from corner pocket to corner pocket.
    b) Find the distance, to the nearest tenth of an inch, diagonally across the table from the corner pocket to side pocket.
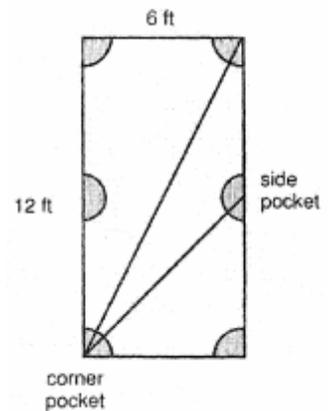
9) The town of Newton is mapped on a coordinate grid with the origin being at City Hall. The cafe is located at the point (-3, 9) and the bookstore is located at (3, 1). How far is it from the café to the bookstore?

10) A doctor reads coordinates off a computer screen for endpoints of a bone. The endpoints are at (-4, 2) and (2, 5). What is the length of the bone? Round your answer to the nearest tenth of a unit.