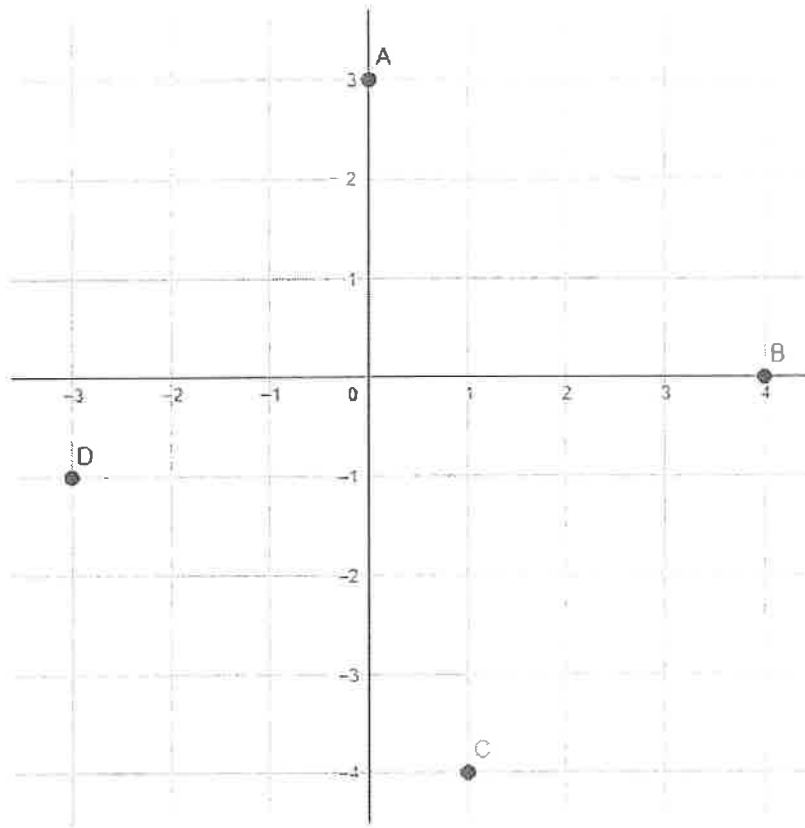


1. a) Four friends live at A, B, C, and D. Prove that quadrilateral ABCD forms a square. Note: Each unit on the coordinate plane is equivalent to 100 yards.



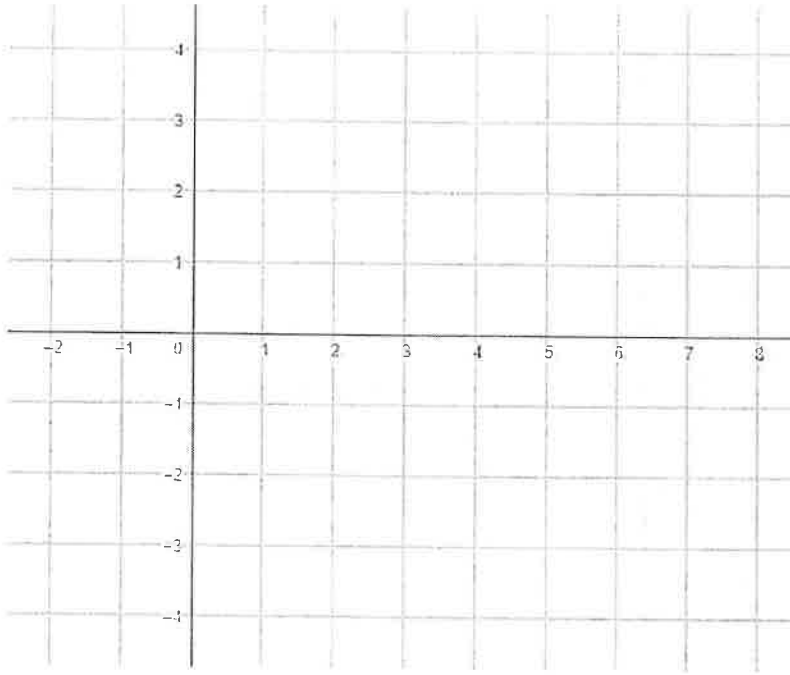
b) April, who lives at point A, decided to run to each person's house and then return to her house while travelling along the sidewalk formed by quadrilateral ABCD. How far did she run (in yards)? Explain.

c) The city plans to build a sidewalk perpendicular to the sidewalk joining April and Bob's house (point B) that goes through the point $(-1, -2)$, where they plan to build a water fountain. Write an equation to represent the new sidewalk.

2.

a) A (1,4), B (5,2) and C (3, -2) are three vertices of a square. What is the fourth?

Note: Each unit on the coordinate plane is equivalent to 1 yard.



b) What is the perimeter in yards?