

Lesson 7-6 • Apply Day

Reinforce Understanding

Comparing Distances on the Plane

I can find the distance between two points on the coordinate plane using absolute value.

Worked model

From the hub H(4.25, 5.75), Ana walks to A(4.25, -3.25) and Beto walks to B(-6.75, 5.75). Who walks farther?

1. Ana's trip shares an x-coordinate, so compare the y-coordinates 5.75 and -3.25.
2. Their signs differ, so the trip crosses the x-axis: $5.75 + 3.25 = 9$
3. Beto's trip shares a y-coordinate; the x-coordinates 4.25 and -6.75 differ in sign.
4. Add those distances: $4.25 + 6.75 = 11$. Then compare 9 with 11.

Answer: Ana walks 9 units and Beto walks 11 units, so Beto walks farther.

Practice

Complete each exercise. Show the reasoning that supports your answer.

1. Find the horizontal or vertical distance between (1, -1) and (6, -1).

Complete each step, then write the final answer.

1. Subtract the changing coordinates: ____.
2. Take absolute value for distance: ____.

Answer: _____

2. Find the horizontal or vertical distance between (-2, 3) and (-2, 9).

Complete each step, then write the final answer.

1. Subtract the changing coordinates: ____.
2. Take absolute value for distance: ____.

Answer: _____

3. Find the horizontal or vertical distance between (3, 5) and (8, 5).

Complete each step, then write the final answer.

1. Subtract the changing coordinates: ____.
2. Take absolute value for distance: ____.

Answer: _____