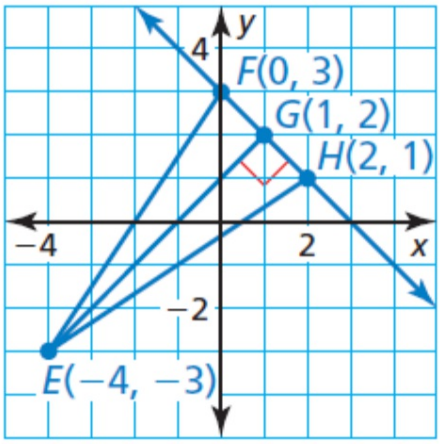
1. Find the distance from point E to $\overleftrightarrow{FH}$.

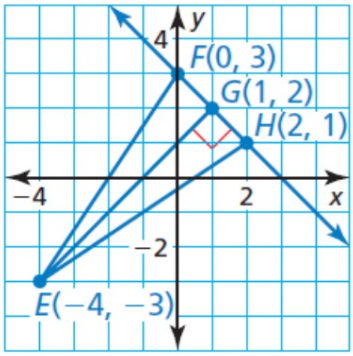


Line FH contains the coordinates 0,3 and 2,1.

Point E is located at -4,-3

Find the slope of FH first.
That is -1.
Next draw a perpendicular line from -4, -3 using the negative reciprocal which is 1.

The line now intersects at line FH at 1,2.

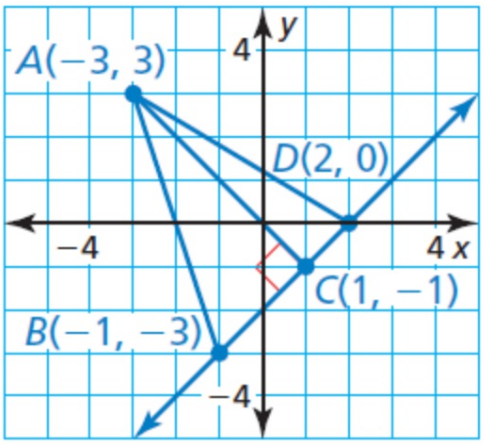


Use the distance formula or pythagorean theorem to solve for the distance. You should get about 7.1

Find the distance from point *A* to $\overleftrightarrow{BD}$.

Line BD contains the coordinates -1,-3 and 2,0.

Point A is located at -3,3



First find the slope of BD which is 1.

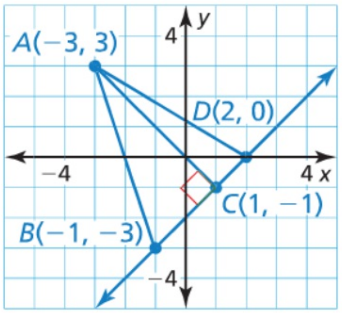
The shortest distance is a perpendicular line from -3, 3 to the line segment BD

The negative reciprocal is -1 so use that slope to draw the line from -3, 3 to line segment BD.

The line now intersects BD at 1,-1.

Next step is using the distance formula to solve (or pythagorean theorem)

Find the distance from point A to BD.



SOLUTION

Because $\overline{AC} \perp \overleftrightarrow{BD}$, the distance from point A to $\overleftrightarrow{BD}$ is AC. Use the Distance Formula.

$$AC = \sqrt{(-3 - 1)^2 + [3 - (-1)]^2} = \sqrt{(-4)^2 + 4^2} = \sqrt{32} \approx 5.7$$

▶ So, the distance from point A to $\overleftrightarrow{BD}$ is about 5.7 units.