

Coordinate Geometry Worksheets

Determine whether each given pair of end points lies on the same horizontal or vertical line. If so, find the length of the line segment that joins the pair of points. If not, explain how you know the points are not on the same horizontal or vertical line.

1. $(0, -2)$ and $(0, 9)$

The end points both have x -coordinates of 0, so they both lie on the y -axis, which is a vertical line. They lie on opposite sides of zero, so their absolute values have to be combined to get the total distance. $|-2| = 2$ and $|9| = 9$, so by addition, $2 + 9 = 11$. The length of the line segment with end points $(0, -2)$ and $(0, 9)$ is 11 units.

2. $(11, 4)$ and $(2, 11)$

The points do not lie on the same horizontal or vertical line because they do not share a common x - or y -coordinate.

3. $(3, -8)$ and $(3, -1)$

The end points both have x -coordinates of 3, so the points lie on a vertical line that passes through 3 on the x -axis. The y -coordinates lie on the same side of zero. The distance between the points is determined by subtracting their absolute values, $|-8| = 8$ and $|-1| = 1$. So, by subtraction, $8 - 1 = 7$. The length of the line segment with end points $(3, -8)$ and $(3, -1)$ is 7 units.

4. $(-4, -4)$ and $(5, -4)$

The end points have the same y -coordinate of -4 , so they lie on a horizontal line that passes through -4 on the y -axis. The numbers lie on opposite sides of zero on the number line, so their absolute values must be added to obtain the total distance, $|-4| = 4$ and $|5| = 5$. So, by addition, $4 + 5 = 9$. The length of the line segment with end points $(-4, -4)$ and $(5, -4)$ is 9 units.

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1. One end point of a line segment is $(-3, -6)$. The length of the line segment is 7 units. Find four points that could serve as the other end point of the given line segment.

2. Two of the vertices of a rectangle are $(1, -6)$ and $(-8, -6)$. If the rectangle has a perimeter of 26 units, what are the coordinates of its other two vertices?

3. A rectangle has a perimeter of 28 units, an area of 48 square units, and sides that are either horizontal or vertical. If one vertex is the point $(-5, -7)$ and the origin is in the interior of the rectangle, find the vertex of the rectangle that is opposite $(-5, -7)$.

4. The coordinates of one end point of a line segment are $(-2, -7)$. The line segment is 12 units long. Give three possible coordinates of the line segment's other end point