



Try these problems before watching the lesson.

1. Find the distance between $(3, 7)$ and $(-1, 10)$.
2. If k is a line through $(2, -5)$ and $(-1, 8)$, then what is the slope of a line that is perpendicular to k ?
3. B and C are constants such that the graph of $x + By = C$ is the perpendicular bisector of the line segment with endpoints $(2, 3)$ and $(6, 9)$. Find C .
4. B and C are constants such that the graph of $x + By = C$ consists of all points that are equidistant from $(-2, 3)$ and $(6, -7)$. Find B .




First Problem: If the point (x, x) is equidistant from $(-2, 5)$ and $(3, -2)$, what is the value of x ?

Second Problem: A line segment with endpoints $A(3, 1)$ and $B(2, 4)$ is rotated about a point in the plane so that its endpoints are moved to $A'(4, 2)$ and $B'(7, 3)$, respectively. What are the coordinates of the center of rotation?

 Follow-up Problems

5. Find the point (x, y) on the graph of $x + y = 3$ that is equidistant from $(3, -1)$ and $(7, -9)$.
6. Name the two points that are $5\sqrt{2}$ units from both $(-2, 4)$ and $(6, 12)$.
7. The circumcenter of a triangle is the center of the circle that passes through all three vertices of the triangle. What is the circumcenter of the triangle with vertices $(0, 0)$, $(6, 0)$, and $(4, 2)$?
8. Points $A(5, 3)$, $B(2, 0)$, $C(-2, 4)$, and $D(x, 2x)$ are in the plane such that point D is equidistant from the sides of $\angle ABC$. What is x ?

 Share Your Thoughts

Have some thoughts about the video? Want to discuss the problems on the Activity Sheet? Visit the MATHCOUNTS Facebook page or the Art of Problem Solving Online Community (www.artofproblemsolving.com).