Proving Type of Quadrilateral Based on Slope and Distance SLOPE FORMULA $\frac{y\_{2}-y\_{1}}{x\_{2}-x\_{1}}$

In your notes:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sides |  |  |  |  |
| Slopes |  |  |  |  |
| simplify |  |  |  |  |

Title: Prove with Slope and Distance

1) Find the slope of DC for D(8, -3), and C(10,1)

2) Sketch a quadrilateral ABCD.

If A(2,1), B(4,5), C(10,1) and D(8,-3) then

3) Name ABCD’s four sides in the grid at the

right.

4) Use slope formula to find the slopes of the

 four sides.

5) Simplify fractions.

What do the slopes tell you about the quadrilateral? Explain.

WXYZ is a quadrilateral. Make another table.

W(-2,5), X(2,6), Y(5,2), Z(-3,0)

Are its coordinates.

Sketch the quadrilateral. Name the four sides.

Find all four slopes. Simplify fractions.

-

Now how many slopes are the same? What does this

tell you about the quadrilateral? Why?

Now try PERL for P(-1,8), E(3,7), R(4,3), L(0,4).

Do all of the same work again.

Is PERL a parallelogram? Is it a rectangle or square?

(How do the slopes tell you that it is not either?)

Is it a rhombus? If so, PERL is equilateral. We can

use the distance formula to determine if PE and ER

have the same lengths. Then we would know if all

four sides are equal in length, and therefore a rhombus. $d=\sqrt{(x-x)^{2}+(y-y)^{2}}$

Homework: Find slopes of sides and lengths of sides. What quadrilateral is it? Why?

M(-2,5), N(2,6), O(4,-2), P(0,-3) P(-5,3), Q(1,6), R(9,0), S(-5,-7)