Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Unit 5 – Quadrilateral Proofs on a Coordinate Plane**

Monica

Geometry Period:\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **SLOPE FORMULA** | **DISTANCE FORMULA** |
|  |  |

Note about slope:

|  |  |
| --- | --- |
| **TO PROVE THAT A SHAPE IS A ….. ON A COORDINATE PLANE** | **SHOW THE FOLLOWING IS TRUE** |
| Parallelogram | 1. 2. 3. |
| Rhombus |  |
| Rectangle |  |
| Square |  |
| Trapezoid |  |
| Isosceles Trapezoid |  |

 1) The coordinates of quadrilateral *ABCD* are , , , and . Using coordinate geometry, prove that quadrilateral *ABCD* is a rhombus. [The use of the grid is optional.]

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 2) Quadrilateral *KATE* has vertices  , , and .

 *a* Prove that *KATE* is a trapezoid. [The use of the grid is optional.]

*b* Prove that *KATE* is *not* an isosceles trapezoid.

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 3) Given: , , , 

Prove: *ABCD* is a parallelogram but not a rectangle. [The use of the grid is optional.]

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 4) The coordinates of quadrilateral *PRAT* are *, , *, and *.* Prove that ** is parallel to *.*

 5) Parallelogram *ABCD* has coordinates , , , and . What are the coordinates of *E*, the intersection of diagonals  and ?

 

 6) The coordinates of the vertices of parallelogram *ABCD* are , , , and . The slopes of which line segments could be calculated to show that *ABCD* is a rectangle?

|  |  |
| --- | --- |
| 1) |  and  |
| 2) |  and  |
| 3) |  and  |
| 4) |  and  |