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.]

****

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.

****

3) Given: , , , 

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

****

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 |