**Coordinate Geometry Proof**

**Christmas Break Project**



**DUE MONDAY JANAURY 3, 2018**

**\*No late work will be accepted\***

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**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Goal**: Use properties of shapes and coordinate geometry to create an artistic masterpiece!

**Instructions**:

1) Choose at least 4 different geometric shapes from the following:

* Square
* Rectangle
* Rhombus
* Parallelogram
* Trapezoid
* Isosceles Trapezoid

2) What characteristics define your shapes? This length of sides, slope of sides, angles, etc. Be as specific as possible. For example, if you say a shape with 4 equal sides, you might mean a square. However, you could also be talking about a rhombus! If you aren’t sure, do some research!

|  |  |
| --- | --- |
| **Shape:****Characteristics/Properties:** | **Shape:****Characteristics/Properties:** |
| **Shape:****Characteristics/Properties:** | **Shape:****Characteristics/Properties:** |

3) Think about what it will take to prove that your shape is actually the shape you’re trying to make. For instance, for a square- you would need to show all 4 side lengths are equal and show that there are right angles (perpendicular lines).

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| **Quadrilateral** | **What do we need to prove?** | **What formula will we use to prove that property?** |
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4) You are creating the shapes yourself. Plot coordinates that make sense. Be colorful, clear, and organized. Avoid using shapes in standard orientation (i.e. squares with only vertical/horizontal sides, trapezoid with set of parallel sides horizontal, etc.)

5) For each shape, complete the following on your poster:

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6) Create either a poster OR a booklet displaying all four of your shapes, calculations, and conclusions.

7) Use your leftover time to decorate and make professional!

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**Grading Rubric**

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| **Element** | **Total Points** | **Points Earned** |
| Characteristics | 8 |  |
| Requirements for proof | 8 |  |
| Accurate Graph | 12 |  |
| Calculations (15 points per shape) | 60 |  |
| Creativity & Effort & Neatness | 12 |  |
| **TOTAL** | 100 |  |