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| **Perimeters of Rectangles- 6.NS.8** | |
| **Domain** | **The Number System** |
| **Cluster** | **Apply and extend previous understandings of numbers to the system of rational numbers.** |
| **Standard(s)** | **6.NS.8** Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.  **6.NS.5** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. |
| **Materials** | Activity sheet |
| **Task** | **Perimeters of Rectangles**  Part 1:  A rectangle has 2 points at (3, -5) and (-1, -5). The rectangle has a perimeter of 12 units. What are the ordered pairs of the two other vertices of this rectangle? Draw the rectangle on the coordinate grid and explain your reasoning.  *Coordinate grid on the activity sheet.*  Part 2:  A rectangle has 2 points at (1, 1) and (1, -2). The rectangle has a perimeter of 14 units and has vertices in all 4 quadrants of the coordinate plane. Draw the rectangle on the coordinate grid and explain your reasoning. |

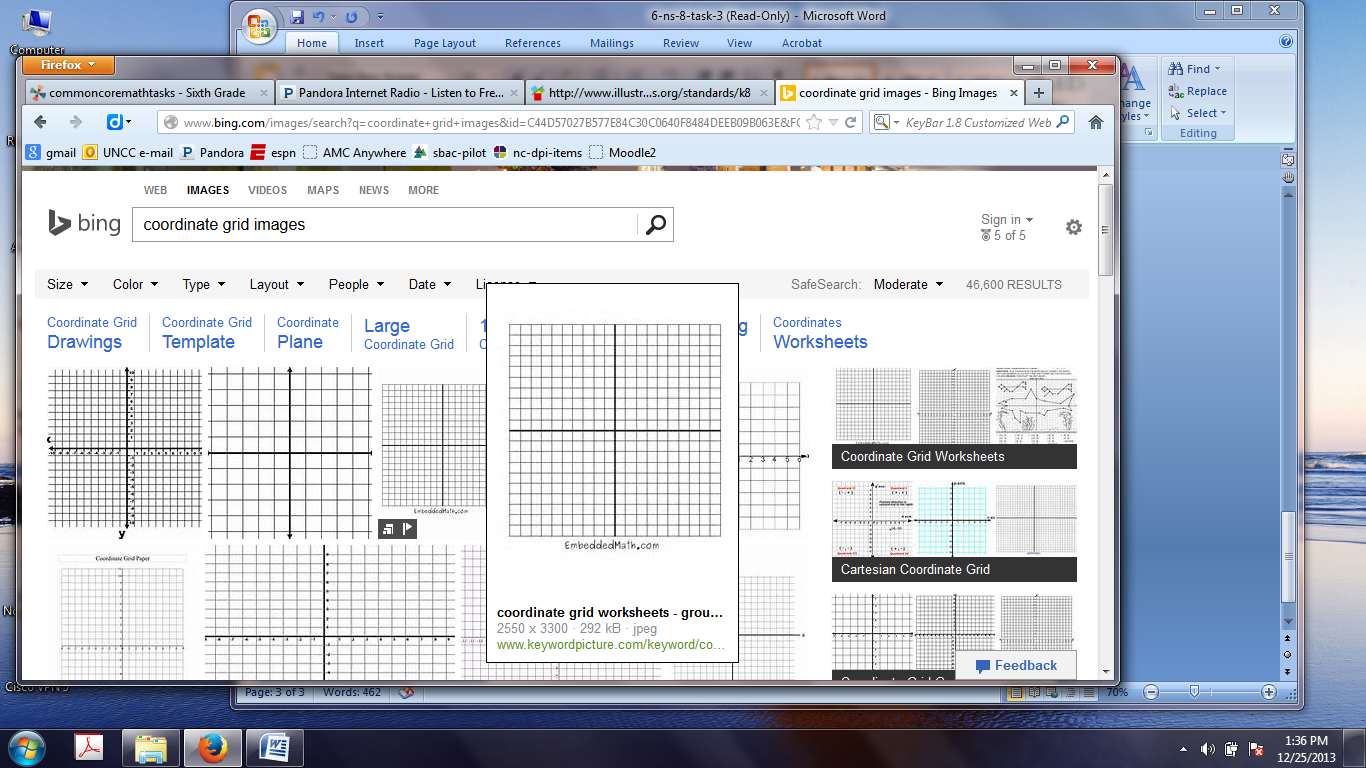
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| **Rubric** | | |
| **Level I** | 1. **Level II** | **Level III** |
| Developing Proficiency   * Student uses inappropriate solution strategy and does not get the correct answer. | Not Yet Proficient   * There are one or two errors. | Proficient in Performance   * Accurately solves problem * Part 1: The two other vertices of the rectangle could be two different answers. They could be at (3, -7) and (-1, -7) or they could be at (3, -3) or (-1, -3). The explanation is clear and accurate. * Part 2: The two other vertices of the rectangle are located at (-3, 1) and (-3, -2). The explanation is clear and accurate. |

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| **Standards for Mathematical Practice** |
| **1. Makes sense and perseveres in solving problems.** |
| **2. Reasons abstractly and quantitatively.** |
| **3. Constructs viable arguments and critiques the reasoning of others.** |
| 4. Models with mathematics. |
| 5. Uses appropriate tools strategically. |
| **6. Attends to precision.** |
| 7. Looks for and makes use of structure. |
| 8. Looks for and expresses regularity in repeated reasoning. |

**Perimeters of Rectangles**

Part 1:

A rectangle has 2 points at (3, -5) and (-1, -5). The rectangle has a perimeter of 12 units. What are the ordered pairs of the two other vertices of this rectangle? Draw the rectangle on the coordinate grid and explain your reasoning.



Part 2:

A rectangle has 2 points at (1, 1) and (1, -2). The rectangle has a perimeter of 14 units and has vertices in all 4 quadrants of the coordinate plane. Draw the rectangle on the coordinate grid and explain your reasoning.