

## Coordinate Products and Sums Project

1. Draw and label a set of coordinate axes on a small graph paper.
2. Plot twelve points on the graph. Two points must be in each quadrant, and two points must be on each axis.
3. Label each point on your graph with its proper coordinates.
4. Attach the graph paper to the white paper. Using the same points, repeat steps 1-4 with a second graph paper.
5. Make a 3 column t-chart on one of the remaining white areas (ordered pairs, products, and sums). List the coordinates of your twelve points on the left, write the product of  $x$  and  $y$ , and then the sum of  $x$  and  $y$  to complete the table.
6. Choose three colors you will use to each represent negative, zero, or positive. Make a color key near the table.
7. Use your key to color each point on your first graph based on its product.
8. Try to figure out the pattern of the colors. If you can't figure out the pattern, choose more points to help. Shade the entire graph with the correct color in each location.
9. Write a 2-3 sentence explanation of what you see. Explain the pattern of the colors and why you think that's what happened.
10. When you are finished, repeat steps 7-9 but for your second graph, use sums instead of products to determine the colors of the points.

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