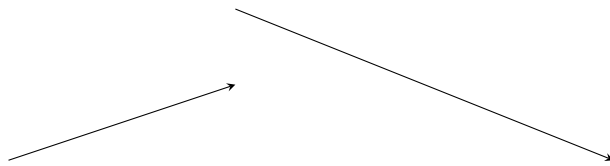# Vector Subtraction

## Practice Your Understanding

Name: _____

Date: _____

1. When subtracting vectors from each other, what equation is used to calculate the resultant vector resulting from the subtraction? Write the formula below.

2. There is a vector $\vec{A}$ on the left and a vector $\vec{B}$ on the right below. In the box below draw vectors $\vec{A}$ and $\vec{B}$ and the resultant vector $\vec{A}$ - $\vec{B}$:

3. A vector $\vec{G} = 5.7\hat{i} + 3.4\hat{j} + 0\hat{k}$ and a vector $\vec{H} = 3.3\hat{i} - 2.9\hat{j} + 0\hat{k}$. How would you calculate the vector subtraction for these two vectors? What formula would you use? What is the resultant vector $\vec{G}$ - $\vec{H}$?

4. From 3, on the graph below draw the vectors $\vec{G}$, $\vec{H}$, and the resultant vector, $\vec{G}$ - $\vec{H}$. What do you notice? (Draw the vectors at a starting point of (0,0).
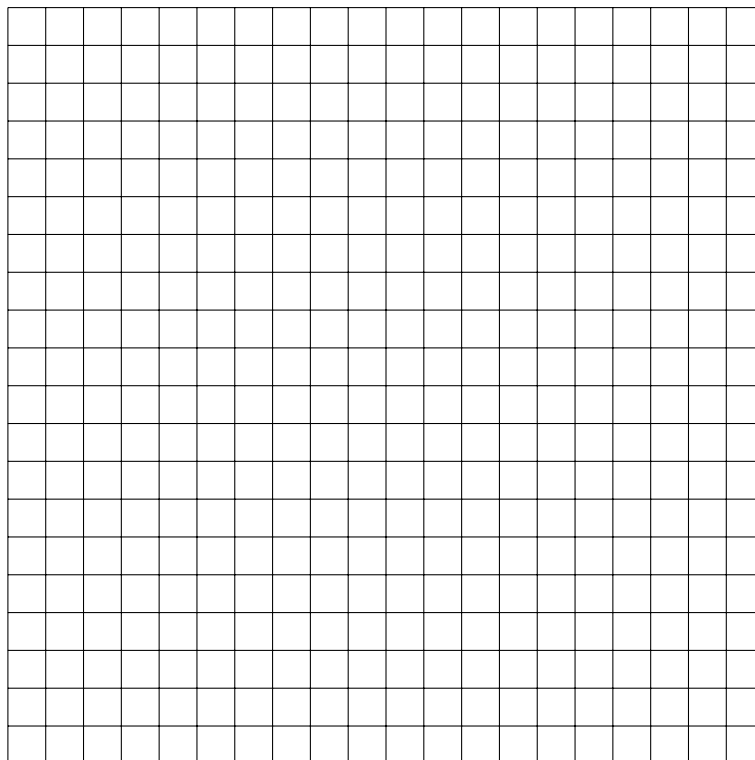
5. From 4, redraw the graph this time, with only vector $\vec{G}$ starting at (0,0). Then draw vector $\vec{H}$, with its head pointing at the head of vector $\vec{G}$. Lastly complete the vector subtraction by drawing vector $\vec{R} = \vec{G} - \vec{H}$ from the tail of vector $\vec{G}$ to the tail of vector $\vec{H}$. How does this graph compare to your earlier graph? Explain why these graphs are the same in the box below.