## Vector Addition

## Practice Your Understanding

Name:	
Date:	

1. When adding vectors together, what equation is used to calculate the resultant vector from adding all vectors together? Write the formula below.

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



3. A vector  $\vec{G} = 2.3\hat{i} - 7.1\hat{j} + 0\hat{k}$  and a vector  $\vec{H} = -5.7\hat{i} + 1.6\hat{j} + 0\hat{k}$ . How would you calculate the vector addition 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  $\vec{H}$  starting at the head of vector  $\vec{G}$ . Lastly complete the vector addition by drawing vector  $\vec{R} = \vec{G} + \vec{H}$  from the tail of vector  $\vec{G}$  to the head of vector  $\vec{H}$ . How does this graph compare to your earlier graph? Explain why these graphs are the same in the box below.



