Vector Scaling

Practice Your Understanding

Name:	_
Date:	_

1. When scaling a vector, what equation would you use? If a vector $\vec{P} = 2\hat{i} - 7\hat{j} + 0\hat{k}$, what are the components of the vector when it is halved? When it is doubled? Write the formula and results below.

2. There is a vector \overrightarrow{A} on the left, a vector \overrightarrow{B} in the middle, and a vector \overrightarrow{C} on the right below. Vector \overrightarrow{B} has an x component of 2, and a y component of 3. What are the component lengths of vectors \overrightarrow{A} and \overrightarrow{C} ? In the box below write your answer.



3. A vector $\vec{G} = 4.3\hat{i} + 9.7\hat{j} - 0\hat{k}$ What are the components of vector \vec{G} when \vec{G} is doubled, halved, tripled, and squared. Write out the vector components in the format provided above. $(\vec{G} = 4.3\hat{i} + 9.7\hat{j} - 0\hat{k})$

4. On the graph below draw the negative vector \vec{H} . $\vec{H} = -2.7\hat{i} + 6.2\hat{j} = 0\hat{k}$.(Draw the vector \vec{H} at a starting point of (0,0), and then draw the negative scaling of the vector).



5. Draw a vector $\vec{F} = 1\hat{i} + 1\hat{j} = 0\hat{k}$. What vector is this? Scale this vector by a factor of 2.5. What are the components of the new vector \vec{F} ? Scale this vector again, by a factor of -5.1. What are the components of the new vector \vec{F} ? Draw the vector \vec{F} in the graph below, and record your calculations for the vectors in the box below.



