LENGTH OF A VECTOR

1. Find the length of $\vec{v} = \hat{i} - 5\hat{j} + \hat{k}$.

2. Find a unit vector pointing in the opposite direction as $\vec{v} = \hat{i} - 5\hat{j} + \hat{k}$.

3. Find a vector of length 2 in the direction of $\vec{v} = \hat{i} - 5\hat{j} + \hat{k}$.

4. Find a vector of length 10 in the opposite direction of $\vec{w} = -3\hat{i} - 2\hat{j} - 8\hat{k}$.

5. Find a unit vector pointing in the same direction as $\vec{w} = -3\hat{i} - 2\hat{j} - 8\hat{k}$.