13.39. **Solve:** **(a)** $\vec{A} \times \vec{B} = (3\hat{i} - \hat{j}) \times (2\hat{i} + 3\hat{j} - \hat{k})$

$$= 6\hat{i} \times \hat{i} + 9\hat{i} \times \hat{j} - 3\hat{i} \times \hat{k} - 2\hat{j} \times \hat{i} - 3\hat{j} \times \hat{j} + \hat{j} \times \hat{k}$$

$$= 0 + 9\hat{k} - 3(-\hat{j}) - 2(-\hat{k}) - 0 + \hat{i} = \hat{i} + 3\hat{j} + 11\hat{k}$$

(b)