

36. If a vector capable calculator is used, this makes a good exercise for getting familiar with those features. Here we briefly sketch the method. Eq. 3-30 leads to

$$2\vec{A} \times \vec{B} = 2(2\hat{i} + 3\hat{j} - 4\hat{k}) \times (-3\hat{i} + 4\hat{j} + 2\hat{k}) = 44\hat{i} + 16\hat{j} + 34\hat{k} .$$

We now apply Eq. 3-23 to evaluate $3\vec{C} \cdot (2\vec{A} \times \vec{B})$:

$$3(7\hat{i} - 8\hat{j}) \cdot (44\hat{i} + 16\hat{j} + 34\hat{k}) = 3((7)(44) + (-8)(16) + (0)(34)) = 540 .$$