Special Problem 2-4.17

The relative directions of a vector \( \mathbf{C} \) and base vectors \( \hat{a}_1 \) and \( \hat{a}_2 \) are shown in the diagram below.

The magnitude of vector \( \mathbf{C} \) is \( |\mathbf{C}| = 2\sqrt{3} \)

Express vector \( \mathbf{C} \) in terms of base vectors \( \hat{a}_1 \) and \( \hat{a}_2 \).