For the arrangement shown below, we are interested in the net force on the -15 C charge.

a). For the force on the -15 C charge, draw the unit \( \hat{F} \) vectors for the 3C (label it \( \hat{F}_3 \)) and 5C charges (label it \( \hat{F}_5 \)).

b). If \( \hat{i} \) is the unit vector in the positive x-direction, and \( \hat{j} \) is the unit vector in the positive y-direction, what is \( \hat{r}_3 \) and \( \hat{r}_5 \) in terms of \( \hat{i} \) and \( \hat{j} \)?

c) What is the net x- and y-components of the force on the -15 C charge. (you do not need to put in a numerical value for the constant \( K \)). Do not forget to put units on your final answer.

\[
\vec{F}_3 = k \frac{(3)(-15)}{3^2} \hat{r}_3 = -5k \hat{j} \text{ N}
\]

\[
\vec{F}_5 = k \frac{(5)(-15)}{5^2} = -3k \hat{j} = +3k \hat{j} \text{ N}
\]