Algebra of Vectors

① Addition

Consider $\vec{a} = a_x \hat{i} + a_y \hat{j} + a_z \hat{k}$

$\vec{b} = b_x \hat{i} + b_y \hat{j} + b_z \hat{k}$

(which we can always do, if we follow steps ① and ② in every problem)

What is $\vec{c} = \vec{a} + \vec{b}$

Answer:

$\vec{c} = (a_x + b_x)\hat{i}$