

(1) (3 points) Let $\vec{a} = (-1, 0, 2)$ and $\vec{b} = (-1, 2, 0)$. Find $|2\vec{a} - \vec{b}|$.

(2) (7 points) Consider the system of linear equations,

$$x_1 + 3x_2 + 3x_3 = 0$$

$$2x_1 + 7x_2 + 5x_3 = 0$$

Reduce the given system to echelon form to find a single solution vector \vec{u} such that the solution space is the set of all scalar multiples of \vec{u} .