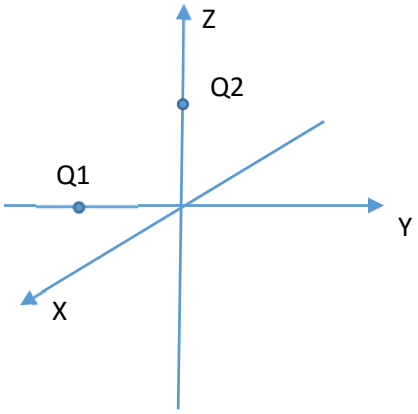
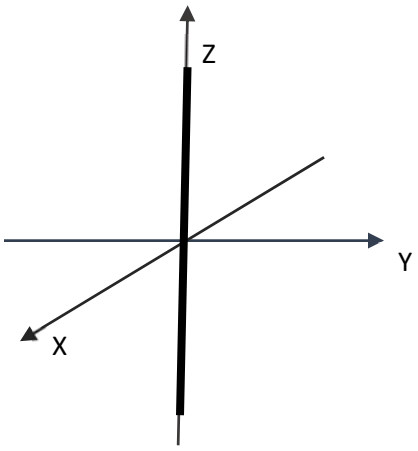
EE321 Exercise

(1) Two point charges, $Q_1 = 2\mu C$ and $Q_2 = 2\mu C$ are located at (0, -2, 0) m and (0, 0, 2) m respectively. Find the force on Q_1.



(2) On the line described by $x = 0\,\text{m}$, $y = 0\,\text{m}$, there is a uniform charge distribution of density $\rho_L = 2nC/m$. Determine the electric field at point (0, 2, 0) m.



(3) Given $\vec{A} = x^2 y\hat{a}_x + yz^2\hat{a}_z$, calculate $\nabla \cdot \vec{A}$

(4) Given $\vec{A} = xy\hat{a}_x + yz\hat{a}_y + x^2 z\hat{a}_z$, calculate $\nabla \times \vec{A}$