Special Problem 4-6.1

An electric dipole with **dipole moment** :

$$\mathbf{p} = 9\pi\varepsilon_0 \left(3\,\hat{a}_x + 2\,\hat{a}_z \right)$$

is located at point $P(x = 0, y = 3, z = 1)$ in free space.

Determine the **potential difference** (in volts) between point P_a $(x = 0, y = 4, z = 1)$ and point P_b $(x = 0,\ y = 3, z = 4)$.