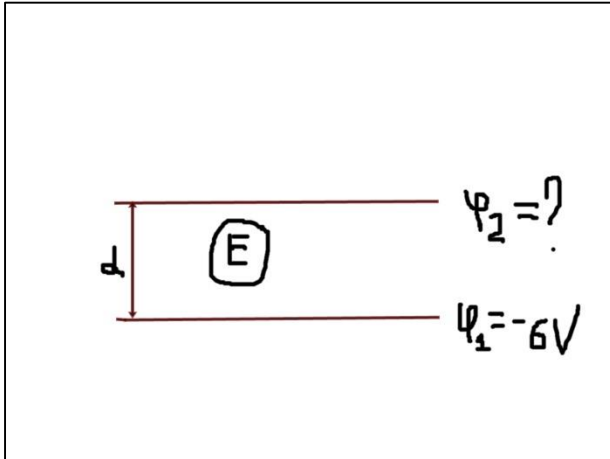


Answer on Question #45976, Physics, Other

Task:

Two large horizontal metal plates are separated by 4 mm. The lower plate is at a potential of $-6V$. What potential should be applied to the upper plate to create electric field strength of $4000 V/m$ upwards in the space between the plates?

Answer:



$$E = \frac{\Delta\varphi}{d} = \frac{\varphi_2 - \varphi_1}{d} \Rightarrow \varphi_2 = Ed + \varphi_1 = 4000V/m \cdot 0.004m - 6 = 10V.$$