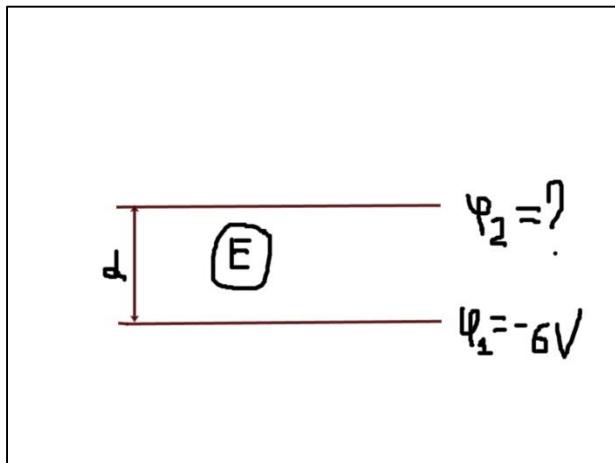


Answer on Question #45976, Physics, Other

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:



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