78. In the "inside" region between the plates, the individual fields (given by Eq. 24.13) are in the same direction $(-\hat{\imath})$:

$$\vec{E}_{\text{in}} = -\left(\frac{50\times10^{-9}}{2\varepsilon_0} + \frac{25\times10^{-9}}{2\varepsilon_0}\right)\hat{\imath} = -4.2\times10^3\,\hat{\imath}$$

in SI units (N/C or V/m). And in the "outside" region where $x > 0.5$ m, the individual fields point in opposite directions:

$$\vec{E}_{\text{out}} = -\frac{50\times10^{-9}}{2\varepsilon_0}\hat{\imath} + \frac{25\times10^{-9}}{2\varepsilon_0}\hat{\imath} = -1.4\times10^3\,\hat{\imath}\ .$$

Therefore, by Eq. 25-18, we have

$$\begin{aligned}\Delta V = -\int_0^{0.8} \vec{E}\cdot d\vec{s} &= -\int_0^{0.5} |\vec{E}|_{\text{in}}\,dx - \int_{0.5}^{0.8} |\vec{E}|_{\text{out}}\,dx \\ &= -\left(4.2\times10^3\right)(0.5) - \left(1.4\times10^3\right)(0.3) \\ &= 2.5\times10^3\ \text{V}\ .\end{aligned}$$