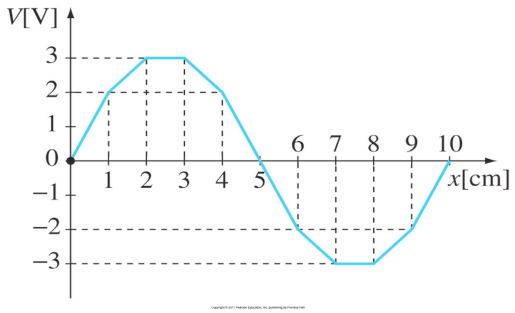
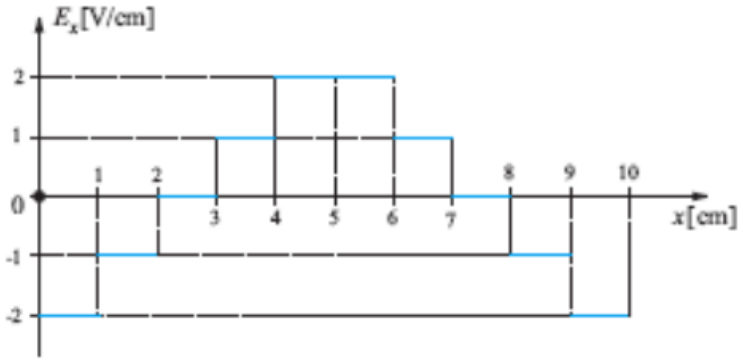
The electrostatic potential V in a region is a function of a single rectangular coordinate x, $V(x)$ and is shown in the figure below. Sketch the components of the electric field intensity **E** in this region



Solution: The electric field intensity in the region is given by $E_x(x) = -dV/dx$, i.e. it equals the negative of the derivative fo the function $V(x)$ at the coordinate x. In otherwords, $E_x(x)$ equals the negative of the slope of the $V(x)$ curve in the figure above at the corresponding absicssa point x, and based on this fact we sketch the function $E_x(x)$ as



Answer: