3. Continued...

(c) What are the boundary conditions on $\psi_{II}(x)$ at $x = 0$?

$\psi_{II}(x=0) = 0$

(d) Write a general expression for $\psi_{II}(x)$ which satisfies the boundary condition at $x = 0$.

In region II the sch. eqn. is $-\frac{\hbar^2}{2m}\frac{\partial^2\psi}{\partial x^2} = E\psi$,

$\psi_{II}(x) = B\sin(kx)$ where $k = \sqrt{\frac{2m}{\hbar^2}E}$

is a solution of this equation which satisfies $\psi_{II}(0) = 0$