PROBLEM:

The impulse response of an LTI continuous-time system is such that $h(t) = 0$ for $t \leq T_1$ and for $t \geq T_2$. By drawing appropriate figures as recommended for evaluating convolution integrals, show that if $x(t) = 0$ for $t \leq T_3$ and for $t \geq T_4$ then $y(t) = x(t) * h(t) = 0$ for $t \leq T_5$ and for $t \geq T_6$. In the process of proving this result you should obtain expressions for T_5 and T_6 in terms of T_1, T_2, T_3, and T_4.