Consider the following system:

\[ X(s) \rightarrow H_1(s) \rightarrow Y(s) \]

\[ H_2(s) \]

where \( H_1(s) \) and \( H_2(s) \) are causal linear time-invariant systems whose impulse responses have the following Laplace transforms:

\[ H_1(s) = \frac{s}{(s + 1)(s + a)} \quad H_2(s) = \frac{b}{s}. \]

(a) Determine \( a \) and \( b \) such that the overall transfer function is

\[ H(s) = \frac{s}{(s + 4)(s + 5)}. \]

(b) Find the output \( y(t) \) of the system with the above transfer function to the unit-step input \( x(t) = u(t) \).