2. [14 points] Find each of the following. *(Note that minimal partial credit will be given on this problem.)*

a. [7 points] $\mathcal{L}\{f(t)\}$, if $f(t) = \begin{cases} 1-t, & 0 \le t < 1 \\ 0, & \text{otherwise} \end{cases}$

b. [7 points] $Y(s) = \mathcal{L}\{y(t)\}$, if $y'' + 9y = u_\pi(t)\cos(4(t-\pi))$, $y(0) = 1$, $y'(0) = 2$.