☰ **Item Navigation**

Discontinuous Inhomogeneous Term

(a) Show that the solution in the lecture,

$$x(t) = \tfrac{1}{2} - e^{-t} + \tfrac{1}{2}e^{-2t} - u_1(t)\left(\tfrac{1}{2} - e^{-(t-1)} + \tfrac{1}{2}e^{-2(t-1)}\right),$$

is continuous at $t = 1$.

(b) Solve

$$\ddot{x} + x = 1 - u_{2\pi}(t), \text{ with } x(0) = 0 \text{ and } \dot{x}(0) = 0.$$

✓ **Completed**

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