1.39. Draw block diagrams for causal LTI systems described by:
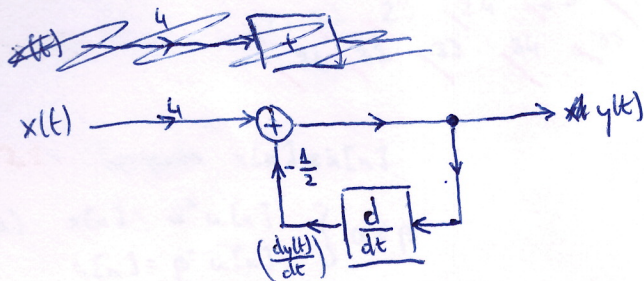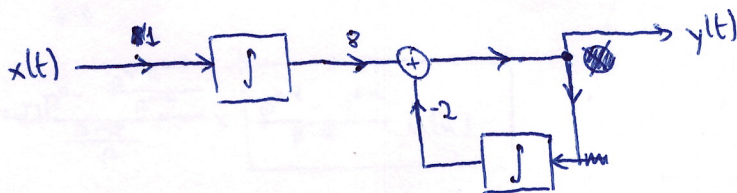
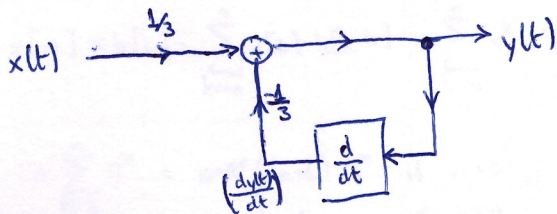a) $y(t) = -\frac{1}{2} \frac{dy(t)}{dt} + 4x(t)$

$\frac{dy(t)}{dt} = -2y(t) + 8x(t) \implies y(t) = -\int 2y(t)\,dt + \int 8x(t)\,dt$

b) $\frac{dy(t)}{dt} + 3y(t) = x(t) \implies y(t) = \frac{1}{3}x(t) - \frac{1}{3}\frac{dy(t)}{dt}$

$\frac{dy(t)}{dt} + 3y(t) = x(t) \implies y(t) = \int x(t)\,dt - 3\int y(t)\,dt$