

## 18.03SC Practice Problems 25

### Step and delta responses

1. Find the unit step and unit impulse responses for the operator  $2D + I$ , and graph them.
2. Find the unit impulse response for the operator  $D^2 + 2D$ , and graph it.
3. From your answer to **2.**, find the solution to  $\ddot{x} + 2\dot{x} = 3\delta(t - 1)$  with rest initial conditions.

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18.03SC Differential Equations  
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