

## TWK2A Dirac delta function (Section 7.5) Problems

1. Solve the IVP

$$y' - 3y = \delta(t - 2)$$

with  $y(0) = 0$ .

2. Solve the IVP

$$y' + y = \delta(t - 1)$$

with  $y(0) = 2$ .

3. Solve the IVP

$$y'' + y = \delta(t - 2\pi)$$

with  $y(0) = 0, y'(0) = 1$ .

4. Solve the IVP

$$y'' + 16y = \delta(t - 2\pi)$$

with  $y(0) = 0, y'(0) = 0$ .

5. Solve the IVP

$$y'' + y = \delta(t - 2\pi) + \delta(t - 4\pi)$$

with  $y(0) = 1, y'(0) = 0$ .