

LaPlace Transform Review Worksheet November 9, 2009

1 Use LaPlace transforms to solve the Initial Value Problem

$$y'' + 4y = 0, y(0) = 3, y'(0) = -1.$$

2 Use LaPlace transforms to solve the Initial Value Problem

$$y'' + 4y = \cos(t), y(0) = 3, y'(0) = -1.$$

3 Use LaPlace transforms to solve the Initial Value Problem

$$y'' + 4y = \cos(2t), y(0) = 3, y'(0) = -1.$$

4 Use LaPlace transforms to solve the Initial Value Problem

$$y'' + 4y = e^{-t} \cos(2t), y(0) = 3, y'(0) = -1.$$

5 Use LaPlace transforms to solve the Initial Value Problem

$$y'' + 4y = \cos(At), y(0) = 3, y'(0) = -1,$$

where $A \neq 2$.

6 Use LaPlace transforms to solve the Initial Value Problem

$$y'' + 4y = H(t - 3\pi) \cos(3t), y(0) = 3, y'(0) = -1.$$

7 Use LaPlace transforms to solve the Initial Value Problem

$$y'' + 4y = H(t - 3\pi) \cos(3t) + 50\delta(t - 10), y(0) = 3, y'(0) = -1.$$

8 Use LaPlace transforms to solve the Initial Value Problem

$$y'' + 4y = H(t - 3\pi) \cos(3t) + C\delta(t - 10), y(0) = 3, y'(0) = -1.$$