

## Quiz 5

1. (5 points) Give the general solution to  $y'' - 6y' + 9y = e^{-2t}$ .
2. (5 points) For  $y'' + 2y' + 2y = 0$ , find a solution  $y(t)$  where  $y(0) = 1$  and  $y'(0) = 0$ .
3. (1 point) Compute the general solution to  $y'' + y' + y = e^{-t/2} \cos(\sqrt{\frac{3}{4}}t)$ . What happens as  $t \rightarrow \infty$ ? (Is this surprising? Think about  $y'' + y = \cos(t)$ .)