

1. [15 points] Find real-valued solutions to each of the following, as indicated. If possible, find an explicit expression for y . (Note that minimal partial credit will be given on this problem.)

a. [5 points] Find the general solution to $y' + 5y = 3e^{6t}$

b. [5 points] Find the solution to $(t + 1)y' + y = 3$, $y(0) = 2$.

c. [5 points] Find the general solution to $y' + y^2 = ty^2$.