

The majority of the credit you receive will be based on the completeness and the clarity of your responses. Please use equal signs where appropriate and write solutions with a logical flow. Show your work, and avoid saying things that are untrue, ambiguous, or nonsensical.

1. Solve the following using the method of variation of parameters.

(a)  $y'' - y = 2t + 4$

(b)  $y'' + 4y' + 4y = e^{-2t} \ln(t)$

(c)  $y'' + y = 3 \sec(t) - t^2 + 1$