

MAE/MSE 502 Fall 2021 HW4 Solution

Problem 1

$$u(x, t) = \sin(t) + t + e^{-t} \left(1 + \frac{t^3}{3} \right) \cos(x)$$

Problem 2

$$u(x, t) = 1 + 2 \sin(x) + e^{-t/4} \sin(x/2)$$

Problem 3

$$u(x, t) = \cos(x) \sin(t) + \sin(x) + e^{72t} \sin(3x)$$

Problem 4

$$u(x, t) = \left(\frac{1}{\pi} \sin(\pi t) + 1 \right) \sin(\pi x)$$