

Math 3150H: Assignment I

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My student number is 0805980 so $p = 9$, $q = 5$, and $r = 22$.

Problem 1. Solve for $u(x, t)$.

$$\begin{aligned} \frac{\partial u}{\partial t} &= 2 \frac{\partial^2 u}{\partial x^2} - 8 \frac{\partial u}{\partial x}, & 0 < x < 2, \quad t > 0, \\ u(t, 0) &= 0, \quad u(2, t) = 0, \quad t > 0, \quad \text{and} \quad u(x, 0) = (x^2 - 2x)e^{2x} \end{aligned}$$

Solution 1.