

Math 301-152 Quiz 7 (A)

Name:.....Sec#:.....ID#:.....Ser#:.....

Q.1: Use Laplace transform to solve the problem

$$a^2 \frac{\partial^2 u}{\partial x^2} - g = \frac{\partial^2 u}{\partial t^2}, \quad x > 0, \quad t > 0,$$

subject to the boundary and initial conditions

$$\begin{aligned} u(0, t) &= 0, & \lim_{x \rightarrow \infty} u(x, t) &= 0, & t > 0, \\ u(x, 0) &= 0, & \left. \frac{\partial u}{\partial t} \right|_{t=0} &= 0, & x > 0, \end{aligned}$$