1. Find the Laplace Transform of the pde \(19u_{xxx} - 7u_{xx} = u_{tt} + 4u_t - 11u\), \(t > 0\).

2. Find the Laplace Transform of the pde \(29u_{xxx} - 17u_{xx} = u_{ttt} + 4u_{tt} - 11u_t + 5u\), \(t > 0\).

3. Find the Laplace Transform of the pde \(29u_{xx} + 17u_{xt} + 11u_{tt} = 0\), \(t > 0\).

4. Solve the pde
   \[u_{xx} = u_{tt}, \quad 0 < x < \pi, \quad t > 0,\]
   subject to the boundary-conditions
   \[u(0, t) = 0, \quad u(\pi, t) = 0, \quad t > 0,\]
   and the initial conditions
   \[u(x, 0) = 0, \quad u_t(x, 0) = 3\sin x - 5\sin 4x, \quad 0 < x < \pi.\]

5. Solve the pde
   \[u_{xx} + \sin x \sin 3t = u_{tt}, \quad 0 < x < \pi, \quad t > 0,\]
   subject to the boundary-conditions
   \[u(0, t) = 0, \quad u(\pi, t) = 0, \quad t > 0,\]
   and the initial conditions
   \[u(x, 0) = 0, \quad u_t(x, 0) = 0, \quad 0 < x < \pi.\]

6. Solve the pde
   \[u_{xx} + 6\sin 2x \sin t = u_{tt}, \quad 0 < x < \frac{\pi}{2}, \quad t > 0,\]
   subject to the boundary-conditions
   \[u(0, t) = 0, \quad u(\pi/2, t) = 0, \quad t > 0,\]
   and the initial conditions
   \[u(x, 0) = 0, \quad u_t(x, 0) = 0, \quad 0 < x < \pi/2.\]