



## 1. Linear Parabolic Equations

1.1. Heat Equation  $\frac{\partial w}{\partial t} = a \frac{\partial^2 w}{\partial x^2}$

1.2. Nonhomogeneous Heat Equation  $\frac{\partial w}{\partial t} = a \frac{\partial^2 w}{\partial x^2} + \Phi(x, t)$

1.3. Convective Heat Equation with a Source  $\frac{\partial w}{\partial t} = a \frac{\partial^2 w}{\partial x^2} + b \frac{\partial w}{\partial x} + cw + \Phi(x, t)$

1.4. Heat Equation with Axial Symmetry  $\frac{\partial w}{\partial t} = a \left( \frac{\partial^2 w}{\partial r^2} + \frac{1}{r} \frac{\partial w}{\partial r} \right)$

1.5. Heat Equation of the Form  $\frac{\partial w}{\partial t} = a \left( \frac{\partial^2 w}{\partial r^2} + \frac{1}{r} \frac{\partial w}{\partial r} \right) + \Phi(r, t)$

1.6. Heat Equation with Central Symmetry  $\frac{\partial w}{\partial t} = a \left( \frac{\partial^2 w}{\partial r^2} + \frac{2}{r} \frac{\partial w}{\partial r} \right)$

1.7. Heat Equation of the Form  $\frac{\partial w}{\partial t} = a \left( \frac{\partial^2 w}{\partial r^2} + \frac{2}{r} \frac{\partial w}{\partial r} \right) + \Phi(r, t)$

1.8. Schrodinger Equation  $i\hbar \frac{\partial w}{\partial t} = -\frac{\hbar^2}{2m} \frac{\partial^2 w}{\partial x^2} + U(x)w$

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The EqWorld website presents extensive information on solutions to various classes of ordinary differential equations, partial differential equations, integral equations, functional equations, and other mathematical equations.