



## 2. Linear Hyperbolic Equations

2.1. Wave Equation 
$$\frac{\partial^2 w}{\partial t^2} = a^2 \frac{\partial^2 w}{\partial x^2}$$

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

2.3. Klein–Gordon Equation 
$$\frac{\partial^2 w}{\partial t^2} = a^2 \frac{\partial^2 w}{\partial x^2} - bw$$

2.4. Nonhomogeneous Klein–Gordon Equation 
$$\frac{\partial^2 w}{\partial t^2} = a^2 \frac{\partial^2 w}{\partial x^2} - bw + \Phi(x, t)$$

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

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

2.7. Telegraph Equation 
$$\frac{\partial^2 w}{\partial t^2} + k \frac{\partial w}{\partial t} = a^2 \frac{\partial^2 w}{\partial x^2} + bw$$

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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.