I. Governing equation

$$u_{xx} = c^2 u_{tt}, \quad -\infty < x < \infty, \ t > 0$$

II. Cauchy data

$$u(x,0) = \phi(x),$$

$$\dot{u}(x,0) = \psi(x),$$

III. D'Alembert's solution :

$$u(x,t) = \frac{1}{2}\phi(x+ct) + \frac{1}{2}\phi(x-ct) + \frac{1}{2c}\int_{x-ct}^{x+ct}\psi(x)dx$$

VI. Methods for D'Alembert's solution :
   1. change variables
   2. Laplace transform
   3. Fourier transform
   4. Green's function

V. Domain of influence

IV. Domain of dependence

IIV. Diamond rule:

$$u_A + u_C = u_B + u_D$$