

**Trovare la soluzione dei problemi seguenti:**

$$\begin{cases} u_t = 4u_{xx}, & t > 0, x \in R \\ u(x, 0) = u_0(x), & x \in R \end{cases}$$

$$\begin{cases} u_t = 2u_{xx} + u_x, & t > 0, x \in R \\ u(x, 0) = u_0(x), & x \in R \end{cases}$$

$$\begin{cases} u_t = u_{xx} + 2u_x + f(x), & t > 0, x \in R \\ u(x, 0) = u_0(x), & x \in R \end{cases}$$

$$\begin{cases} u_t = 3u_{xx} + 5u_x + f(x), & t > 0, x \in R \\ u(x, 0) = u_0(x), & x \in R \end{cases}$$

$$\begin{cases} u_{tt} = 3u_{xx}, & t > 0, x \in R \\ u(x, 0) = u_0(x), & x \in R \\ u_t(x, 0) = u_1(x), & x \in R \end{cases}$$

$$\begin{cases} u_{tt} = u_{xx} + u_x + \frac{1}{4}u, & t > 0, x \in R \\ u(x, 0) = u_0(x), & x \in R \\ u_t(x, 0) = u_1(x), & x \in R \end{cases}$$

$$\begin{cases} u_{tt} = u_{xx} + 4u_x + 4u, & t > 0, x \in R \\ u(x, 0) = u_0(x), & x \in R \\ u_t(x, 0) = u_1(x), & x \in R \end{cases}$$

$$\begin{cases} u_{tt} = 4u_{xx} + 4u_x + u, & t > 0, x \in R \\ u(x, 0) = u_0(x), & x \in R \\ u_t(x, 0) = u_1(x), & x \in R \end{cases}$$

$$\begin{cases} u_{tt} = u_{xx} + 6u_x + 9u, & t > 0, x \in R \\ u(x, 0) = u_0(x), & x \in R \\ u_t(x, 0) = u_1(x), & x \in R \end{cases}$$