

Übungsserie 11

$$\begin{aligned} 2. a_1) \quad w_x(x,t) &= \cos(x+ct) & w_{xx}(x,t) &= -\sin(x+ct) \\ w_t(x,t) &= c \cdot \cos(x+ct) & w_{tt}(x,t) &= -c^2 \cdot \sin(x+ct) \\ -c^2 \cdot \sin(x+ct) &= c^2 \cdot (-\sin(x+ct)) \quad \checkmark \end{aligned}$$

$$\begin{aligned} a_2) \quad v_x(x,t) &= \cos(x+ct) - 2 \cdot \sin(2x+2ct) \\ v_{xx}(x,t) &= -\sin(x+ct) - 4 \cdot \cos(2x+2ct) \\ v_t(x,t) &= c \cdot \cos(x+ct) - 2c \cdot \sin(2x+2ct) \\ v_{tt}(x,t) &= c^2 \cdot \cos(x+ct) - 4c^2 \cdot \cos(2x+2ct) \\ c^2 \cdot \cos(x+ct) - 4c^2 \cdot \cos(2x+2ct) &= c^2 \cdot (-\sin(x+ct) - 4 \cdot \cos(2x+2ct)) \quad \checkmark \end{aligned}$$