Use problem 3-2 and equation 3.42 to show that

$$\frac{\partial \psi}{\partial t} = -\frac{i}{\hbar}\left(-\frac{\hbar^2}{2m}\frac{\partial^2 \psi}{\partial x^2}\right) \tag{1}$$

From 3.42 we have

$$\psi(x,t) = \int_{-\infty}^{\infty} K_0(x,t;x_c,t_c)\psi(x_c,t_c)\,dx_c \tag{2}$$

Let

$$\psi(x_c,t_c) = K_0(x_c,t_c;x_a,t_a)$$

and let I be the integrand

$$I = K_0(x,t;x_c,t_c)\psi(x_c,t_c)$$

Since $\psi(x_c,t_c)$ does not depend on x or t we have by problem 3-2

$$\frac{\partial I}{\partial t} = -\frac{i}{\hbar}\left(-\frac{\hbar^2}{2m}\frac{\partial^2 I}{\partial x^2}\right)$$

Then (1) follows from (2) by linearity of differentiation.