Given the free particle kernel

$$K_0(b,a) = \left(\frac{m}{2\pi i\hbar(t_b - t_a)}\right)^{1/2} \exp\left(\frac{im(x_b - x_a)^2}{2\hbar(t_b - t_a)}\right)$$

show that

$$\frac{\partial K_0}{\partial t_b} = -\frac{i}{\hbar}\left(-\frac{\hbar^2}{2m}\frac{\partial^2 K_0}{x_b^2}\right)$$

Eigenmath solution

```
K0 = sqrt(m / 2 / pi / i / hbar / (tb - ta)) *
     exp(i m (xb - xa)^2 / 2 / hbar / (tb - ta))

d(K0,tb) == -i / hbar (-hbar^2 / 2 / m d(K0,xb,xb))
```