$$C_t = E_t^Q\left[e^{-r(T-t)} \max(0, S_T - K)\right]$$

1. Suppose $S_t >> K \Rightarrow$ Very, very likely $S_T > K$

Then $C_t \approx E_t^Q\left[e^{-r(T-t)}(S_T - K)\right]$

$= E_t^Q\left[e^{-r(T-t)} S_T\right] - e^{-r(T-t)} K$

$= S_t - e^{-r(T-t)} K$

$\Rightarrow \frac{\partial C}{\partial S_t} \approx 1$ $\quad$ (and $\frac{\partial P}{\partial t} \approx 0$, $\frac{\partial P}{\partial \sigma} \approx 0$)

$\frac{\partial^2 C}{\partial S_t^2} = 0$

2. Suppose $S_t << K \Rightarrow$ very, very likely $S_T < K$

$\Rightarrow C_t \approx 0 \Rightarrow \frac{\partial C_t}{\partial S_t} \approx 0$ $\quad$ (and $\frac{\partial P_t}{\partial S_t} \approx -1$, $\frac{\partial P_t}{\partial \sigma} \approx 0$)

$\frac{\partial^2 C_t}{\partial S_t} = 0$