$$c(s,t) = sN(d_+(s,T-t)) - Ke^{-r(T-t)}N(d_-(s,T-t)), \quad d_\pm(s,\tau) = \frac{\ln\left(\frac{s}{K}\right) + \left(r \pm \frac{\sigma^2}{2}\right)\tau}{\sigma\sqrt{\tau}}.$$

(1) $$d_-(s,\tau) = d_+(s,\tau) - \sigma\sqrt{\tau},$$

(2) $$\frac{\partial d_+(s,T-t)}{\partial t} = \frac{\partial d_-(s,T-t)}{\partial t} - \frac{\sigma}{2\sqrt{T-t}},$$

(3) $$\frac{\partial d_+(s,\tau)}{\partial s} = \frac{\partial d_-(s,\tau)}{\partial s} = \frac{1}{\sigma s\sqrt{\tau}},$$

(4) $$N'(x) = \frac{1}{\sqrt{2\pi}}e^{-\frac{x^2}{2}},$$

(5) $$sN'(d_+(s,\tau)) - Ke^{-r\tau}N'(d_-(s,\tau)) = 0,$$

(6) $$\frac{\partial c(s,t)}{\partial t} = -rKe^{-r(T-t)}N(d_-(s,T-t)) - \frac{\sigma s}{2\sqrt{T-t}}N'(d_+(s,T-t)),$$

(7) $$\frac{\partial c(s,t)}{\partial s} = N(d_+(s,T-t)),$$

(8) $$\frac{\partial^2 c(s,t)}{\partial s^2} = \frac{N'(d_+(s,T-t))}{\sigma s\sqrt{T-t}},$$

(9) $$\frac{\partial c(s,t)}{\partial t} + rs\frac{\partial c(s,t)}{\partial s} + \frac{\sigma^2 s^2}{2}\frac{\partial^2 c(s,t)}{\partial s^2} = rc(s,t),$$

(10) $$\lim_{t\to T^-} c(s,t) = (s-K)^+.$$