$\Rightarrow$ can use Feynman-Kac result,

$$G(S_0, t) = E[G(S_T, T) | S_t = S_0]$$

$$G(S_0, t) = E[\Psi(S, T) | S_t = S_0] \quad (\text{where } dS = rSdt + \sigma S dz)$$

· Substitute F back in,

$$F(S_0, t) = e^{-r(T-t)} E[F(S_T, T) | S_t = S_0]$$

$$F_t = e^{-r(T-t)} \hat{E}[F_T | S_t] \leftarrow \text{risk neutral pricing formula}$$