We assume in both problems that under the true probability distribution $P$, the stock price $S$ is given by
\[ dS_t = \mu S_t dt + \sigma S_t dW_t. \] (1)
Also suppose that the short rate $r$ is constant under $P$.

1. **The Asian call option (continued).** In Problem 1 from last week’s HW, find the trading strategy to replicate the option payoff. As before, do not try to calculate the function $A$.

2. **The double knock-out option (continued).**

   (a) As in Problem 2 from last week’s HW, let $C(S_0, T)$ be the value of the double knock-out option at time $t=0$, with stock price $S_0$. Give the price of the knock-out option at time $t$, in terms of the function $C$. Recall that there is no closed functional form of $C$ (except as an infinite sum).

   (b) Represent $C(S_0, T) = S_0 f(K/S_0, X_1/S_0, X_2/S_0, T)$, where $f$ only depends on $r$ and $\sigma$. Find the hedging strategy for the double knock-out option in terms of $f$. 