
Provide your final answer only for the following problems.

**Problem 6.1.** Which of the following statements does NOT accurately reflect the relationship between securities and “synthetic” forward contracts?

(a) Forward = stock – zero coupon bond
(b) Zero coupon bond = stock – forward
(c) Prepaid forward = forward – zero coupon bond
(d) Stock = forward + zero coupon bond
(e) All of the above are accurate.

**Problem 6.2.** What do we call an option in which the holder has a claim that pays one share of stock if \( S(T) > K \), and nothing otherwise?

(a) Cash-or-nothing option
(b) Asset-or-nothing option
(c) Lookback option
(d) Digital cash.
(e) None of the above.

**Problem 6.3.** Denote the continuously compounded interest rate by \( r \). Let \( V_{CC}(0) \) denote the price of a cash call on the asset \( S \) with strike \( K \) and exercise date \( T \). Let \( V_{CP}(0) \) denote the price of a cash put on the asset \( S \) with strike \( K \) and exercise date \( T \). Then,

\[
V_{CC}(0) + V_{CP}(0) =
\]

(a) \( e^{-rT} \)
(b) 1
(c) \( e^{rT} \)
(d) \( F_{0,T}^P(S) \)
(e) None of the above

**Problem 6.4.** Denote the continuously compounded interest rate by \( r \). Let \( V_{AC}(0) \) denote the price of an asset call on the asset \( S \) with strike \( K \) and exercise date \( T \). Let \( V_{AP}(0) \) denote the price of an asset put on the asset \( S \) with strike \( K \) and exercise date \( T \). Then, regardless of whether \( S \) pays dividends or not,

\[
V_{AC}(0) + V_{AP}(0) =
\]

(a) \( Ke^{-rT} \)
(b) \( S(0) \)
(c) \( F_{0,T}(S) \)
(d) \( F_{0,T}^P(S) \)
(e) None of the above