King Saud University | Department of Mathematics
ACTU(461) | 1st Quiz

Name:
ID:

1. A stock has current price So = 40. The annual continuous interest rate and dividend yield are r =.025 and delta= .01 if the expiration time for a forward contract is T=.5, what is the difference between the forward price and the prepaid forward price?

A) 0.10
B) 0.20
C) 0.30
D) 0.40
E) 0.50

2. A market maker in stock index forward contracts observes a 1.5-year forward price of 117 on the index. The index spot price is 110 and the continuously compounded annual dividend yield on the index is 1%. The continuously compound risk-free interest rate is 5%.
Describe actions that that market maker could take to exploit an arbitrage opportunity and calculate the resulting profit per index unit.

(A) Buy forward, sell synthetic forward, profit = 0.05
(B) Buy forward, sell synthetic forward, profit = 0.1
(C) Buy foward, sell synthetic forward, profit = 0.2
(D) Sell forward, buy synthetic forward, profit = 0.1
(E) Sell forward, buy synthetic forward, profit = 0.05

3. A non-dividend-paying stock currently sells for 50. One year from now the stock sells for 51.5. The annual effective risk-free rate is 2%. A trader purchases the stock in the following manner:
(i) The trader pays 51 in one year
(ii) The trader takes possession of the stock now
Determine which of the following describes this arrangement

(A) Outright purchase
(B) Fully leveraged purchase
C) Prepaid forward contract
(D) Forward contract