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UNIVERSITY OF TEXAS AT AUSTIN

Quiz #12

Review of options and forwards.

In preparation for the next class, please solve the following problems:

**Problem 12.1.** (5 points) For a continuous-dividend-paying asset whose price is denoted by  $\mathbf{S} = \{S(t), t \geq 0\}$  with the dividend yield  $\delta$ , what is the expression for:

- (i) (2 points) the **prepaid-forward** price for delivery of one unit of the asset at time  $-T$ ;
- (ii) (3 points) the **forward** price for delivery of one unit of the asset at time  $-T$

**Problem 12.2.** (4 points) Consider an asset with the price is denoted by  $\mathbf{S} = \{S(t), t \geq 0\}$ .

(2 points) What is the expression for the **payoff** of a long  $K$ -strike European call on that asset with exercise date  $T$ ?

(2 points) What is the expression for the **payoff** of a long  $K$ -strike European put on that asset with exercise date  $T$ ?

**Problem 12.3.** (6 points)

Consider an asset with the price is denoted by  $\mathbf{S} = \{S(t), t \geq 0\}$ .

Portfolio  $A$  consists of the following components:

- a long  $K$ -strike European call on  $\mathbf{S}$  with exercise date  $T$ , and
- a short  $K$ -strike European put on  $\mathbf{S}$  with exercise date  $T$ .

Draw the payoff curve of the above portfolio.