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

**Problem 2.1.** (5 points) For a continuous-dividend-paying asset whose price is denoted by $S = \{S(t), t \geq 0\}$ 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 2.2.** (4 points) Consider an asset with the price is denoted by $S = \{S(t), t \geq 0\}$.

(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 2.3. (6 points)
Consider an asset with the price is denoted by $S = \{S(t), t \geq 0\}$.
Portfolio $A$ consists of the following components:
• a long $K$–strike European call on $S$ with exercise date $T$, and
• a short $K$–strike European put on $S$ with exercise date $T$.
Draw the payoff curve of the above portfolio.