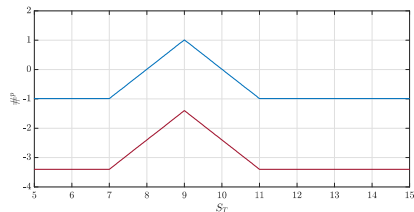


# Financial Derivatives and Risk Management

Online Examination

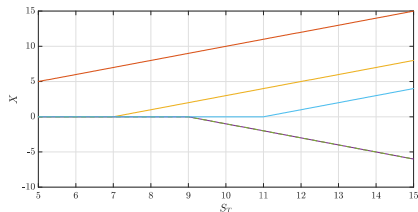
Student: Surname, Name

# Topic 1

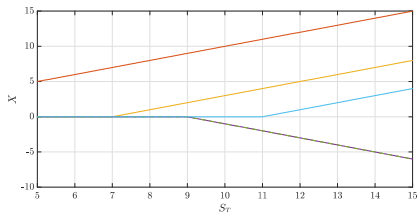
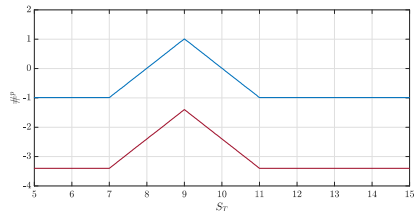


Consider the figure to the left

1 Describe the figure's top-panel



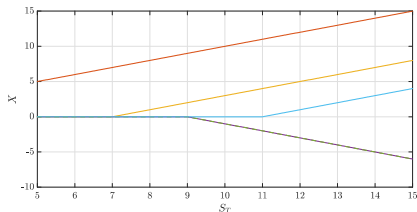
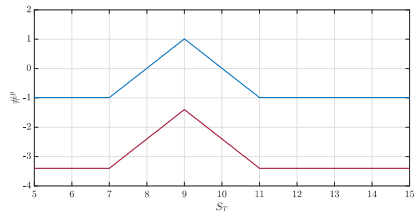
# Topic 1



Consider the figure to the left

- 1 Describe the figure's top-panel
- 2 What is the color of the line representing the asset on the figure's bottom-panel that does *not* belong to portfolio  $p$ ?

# Topic 1



Consider the figure to the left

- 1 Describe the figure's top-panel
- 2 What is the color of the line representing the asset on the figure's bottom-panel that does *not* belong to portfolio  $p$ ?
- 3 What is the color of the line representing portfolio  $p$  if  $\Pi(0; p) = 1$ ?

```
1 # = nan(2*(2*N-1),N);  
2 for t=0:N-1  
3   for k=0:t  
4     #(2*(N+t-2*k)-1,t+1) =  
      (u*C(N+2+t-2*k,t+2)-  
      d*C(N+t-2*k,t+2))/(u-  
      d)/(1+R);  
      [...]  
5   end  
6 end
```

Consider the code to the left

- 1 What objective do these command help achieve?

```
1 # = nan(2*(2*N-1),N);  
2 for t=0:N-1  
3   for k=0:t  
4     #(2*(N+t-2*k)-1,t+1) =  
      (u*C(N+2+t-2*k,t+2)-  
      d*C(N+t-2*k,t+2))/(u-  
      d)/(1+R);  
      [...]  
5   end  
6 end
```

Consider the code to the left

- 1 What objective do these command help achieve?
- 2 What does # represent?

```
1 # = nan(2*(2*N-1),N);  
2 for t=0:N-1  
3   for k=0:t  
4     #(2*(N+t-2*k)-1,t+1) =  
      (u*C(N+2+t-2*k,t+2)-  
       d*C(N+t-2*k,t+2))/(u-  
       d)/(1+R);  
      [...]  
5   end  
6 end
```

Consider the code to the left

- 1 What objective do these command help achieve?
- 2 What does # represent?
- 3 What role does line 3 play in the code?

Consider the following expression

$$C_t^E \geq S_t - \# \cdot B_t, \quad \forall t < T$$

① What does # represent?



Consider the following expression

$$C_t^E \geq S_t - \# \cdot B_t, \forall t < T$$

- 1 What does  $\#$  represent?
- 2 What is the objective of this inequality?

Consider the following expression

$$C_t^E \geq S_t - \# \cdot B_t, \quad \forall t < T$$

- 1 What does  $\#$  represent?
- 2 What is the objective of this inequality?
- 3 What are the implications concerning  $C_t^A$ ?

- ① if ( $S(k,1) \geq K$ )
- ② Pos = 1;
- ③ CF(1) = -S(#,1);
- ④ else
- ⑤ Pos = 0;
- ⑥ end

Consider the code to the left

- ① What objective do these command help achieve?

- ① if ( $S(k,1) \geq K$ )
- ② Pos = 1;
- ③ CF(1) =  $-S(\#,1)$ ;
- ④ else
- ⑤ Pos = 0;
- ⑥ end

Consider the code to the left

- ① What objective do these command help achieve?
- ② What does # represent?

- ① if ( $S(k,1) \geq K$ )
- ② Pos = 1;
- ③ CF(1) = -S(#,1);
- ④ else
- ⑤ Pos = 0;
- ⑥ end

Consider the code to the left

- ① What objective do these command help achieve?
- ② What does # represent?
- ③ What role does line 5 play in the code?