For each of the following payoff graphs, describe a combination of options (long puts, long calls, short puts, short calls) that reproduces it.

Example.

Payoff

Solution.

Long call struck at $K_1$, short call struck at $K_2$. 

Exercise 1.

Exercise 2.

Exercise 3.

Exercise 4.
Exercise 5. 

Payoff

$K_1$ $K_2$ $S_T$

Exercise 6. 

Payoff

$K_1$ $K_2$ $S_T$

Exercise 7. 

Payoff

$K$ $S_T$

Exercise 8. 

Payoff

$K$ $S_T$

Exercise 9. 

Payoff

$K$ $S_T$

Exercise 10. 

Payoff

$K_1$ $K_2$ $K_3$ $S_T$

**Bonus Exercise.** There are two different solutions to Exercise 10. In addition to your original answer, find the second solution.