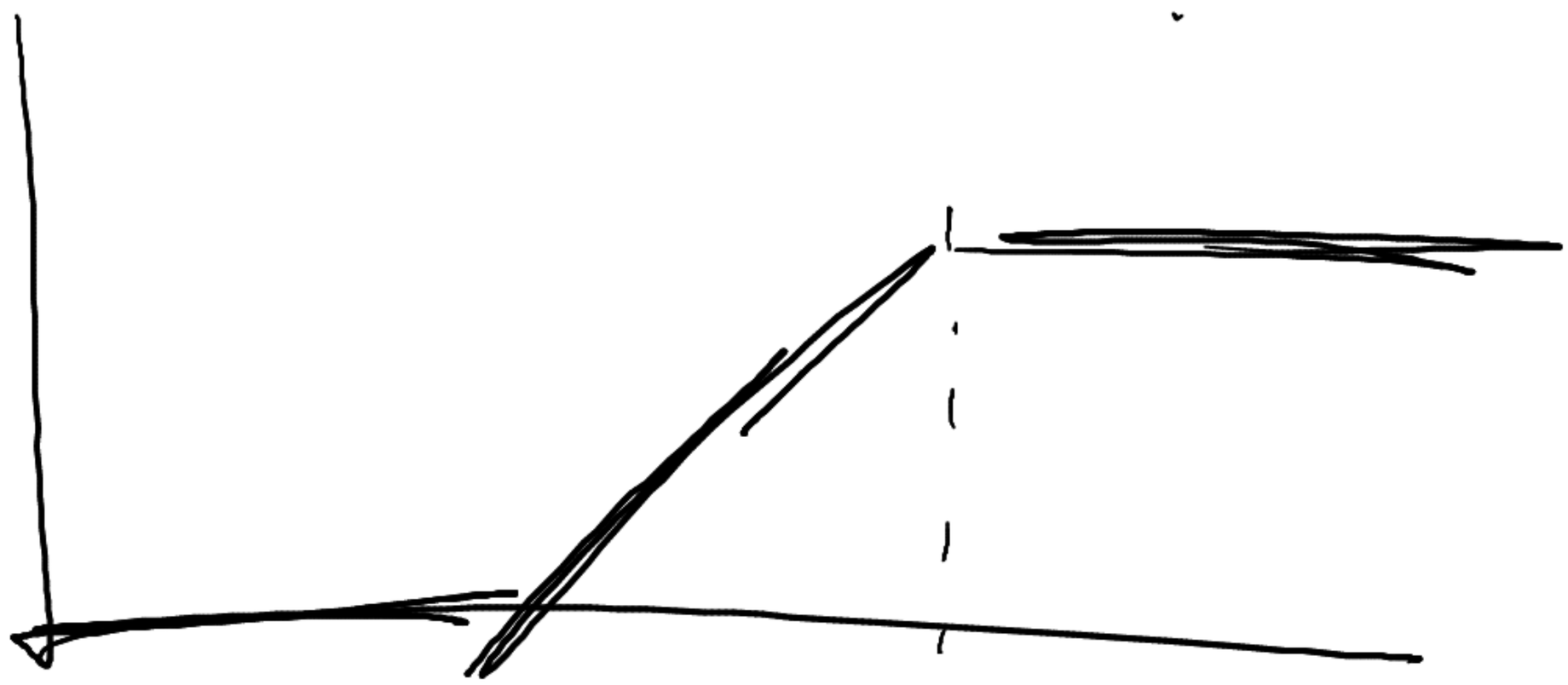
Derivatives Note. 07/16.

Call Spread.

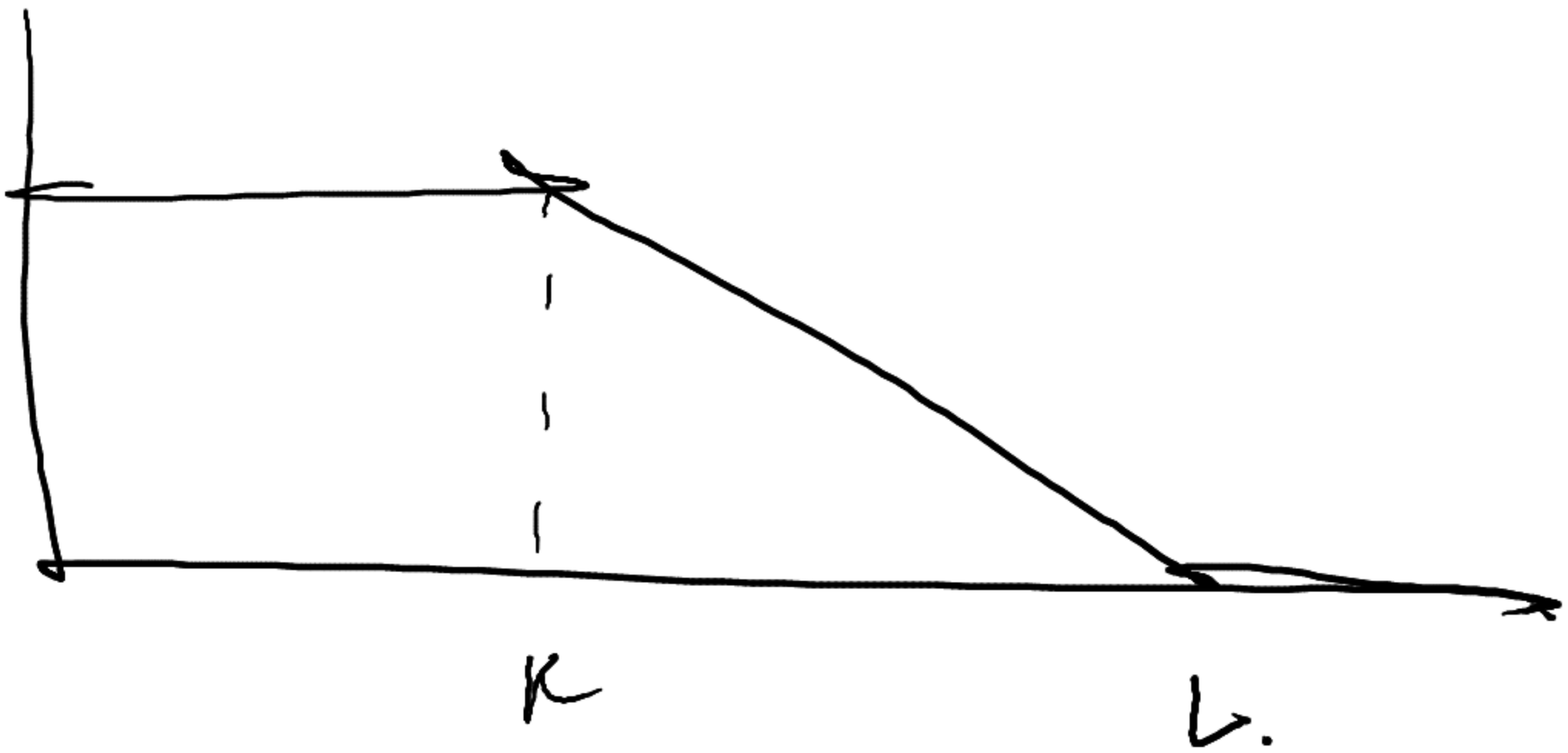
Long a call with strike K, short a call with strike L (L > K)



Since the payoff is non-negtive, the value of the spread must be positive

$K < L \Rightarrow Call(K,T) > Call(L,T)$

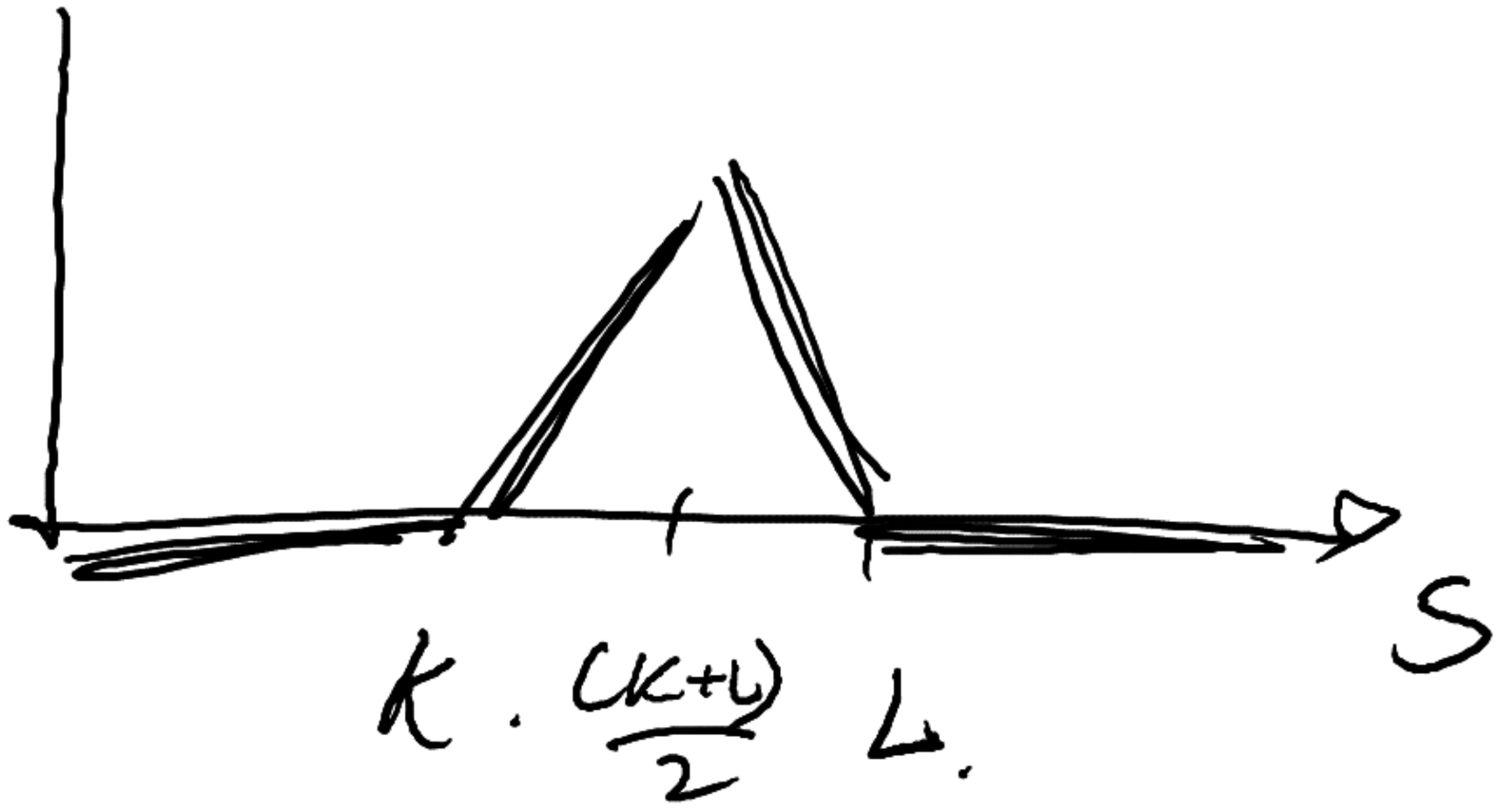
put spread.



Long a put with strike K,
Short a put with strike L. (L>K).

Butterfly Spread.

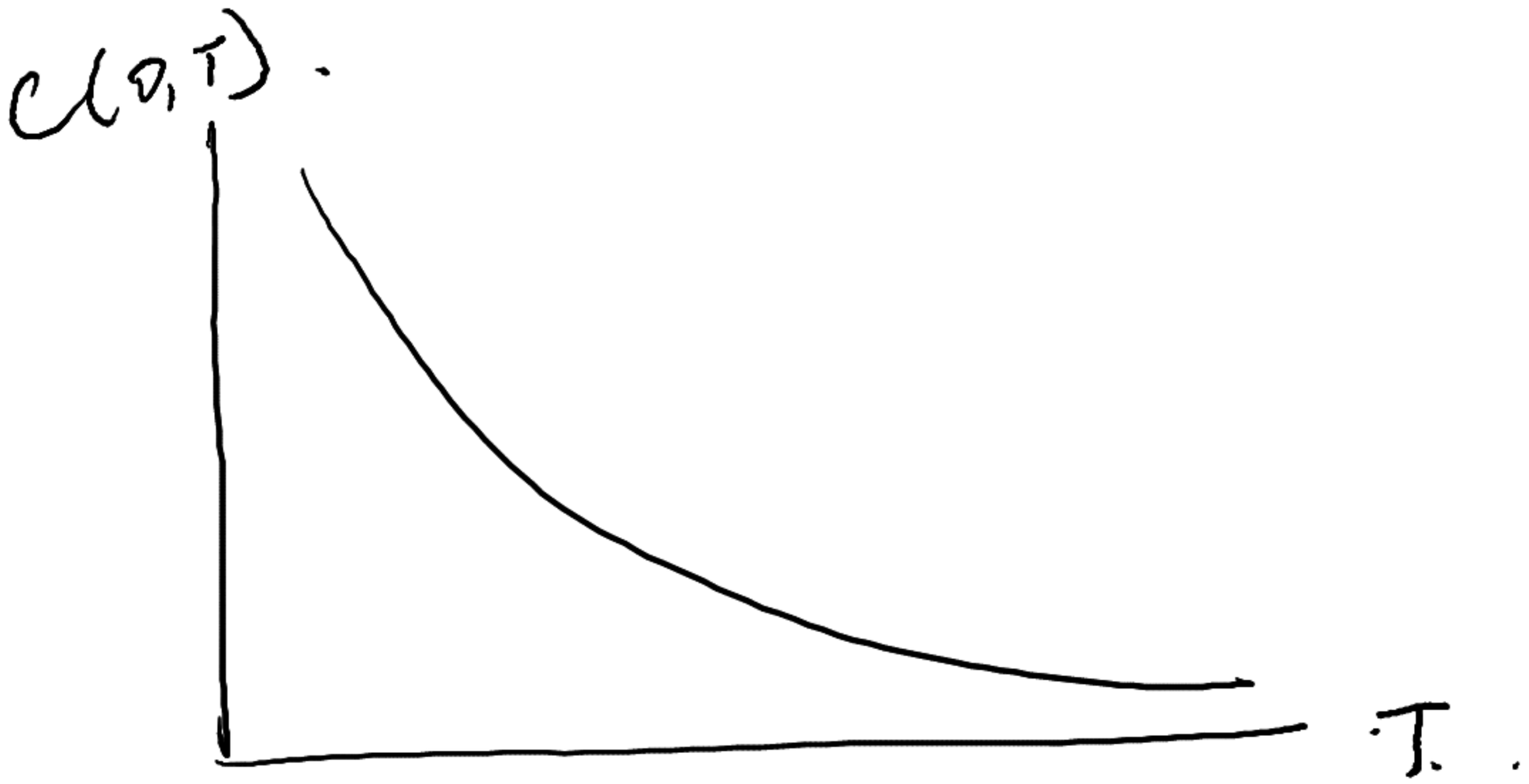
Butterfly spread.



Long call with strike K.

Long call with strike L.

Short 2 calls with strike $\frac{(K+L)}{2}$.


c(0,T)
T

Reconstructing Call prices from
Butterfly Spreads.

$$S_T = \overline{F}_t e^{\sigma\sqrt{T}G - \frac{1}{2}\sigma^2 T}.$$

Black-Scholes Model.

Only works for European options