Options

option: the right, but not obligation, to buy or sell something under specified terms

call option: option to buy something
put option: option to sell something
underlying: the something (usually some stock)
specified term: usually a specified price and period under which it is valid

strike price – the specified price at which you may buy or sell the underlying

expiration date: last day on which the option is valid

~~cost~~
option premium: the cost/price of the option

exercise ("to exercise the option"): following through and buying/selling ~~at~~ under the specified terms

American style: option may be exercised at any time up to the expiration date

European style: option may only be exercised on the expiration date

Example: you pay the owner of a house $15k for the option to buy the house for $200k anytime in the next year.
type: American-style call strike: $200k expiration date: in 1 year
underlying: the house premium: $15k

Stock Options

underlying: 100 shares of a stock
usually priced on a per share basis
usually American style

example: GE put options expiring June 19, 2009 with a strike price of $10/share.

Cost/premium: $3.30/share on 3/9/2009 according to Yahoo finance.

in- / at- / out-of the money: in the money if it makes sense to exercise. A call is in-the-money if the stock price S is greater than the strike price K. A put is in the money if $S < K$

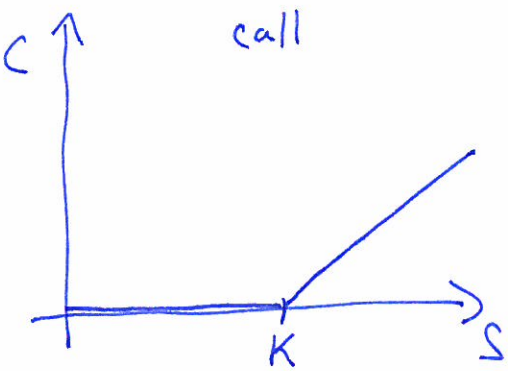
	$S < K$	$S = K$	$S > K$
call	out of the money	at the money	in the money
put	in the money	at the money	out of the money

"write" an option: to sell an option

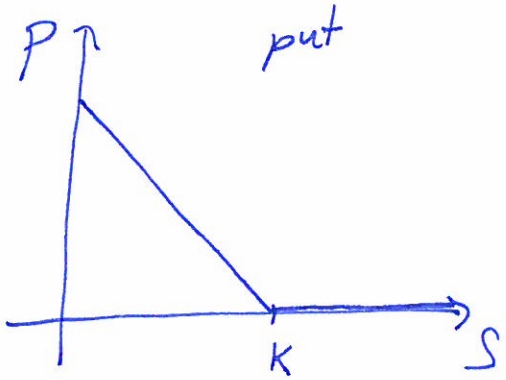
complications: dividends, margin requirements for option writing

value of option at expiration

S - stock price K - strike price

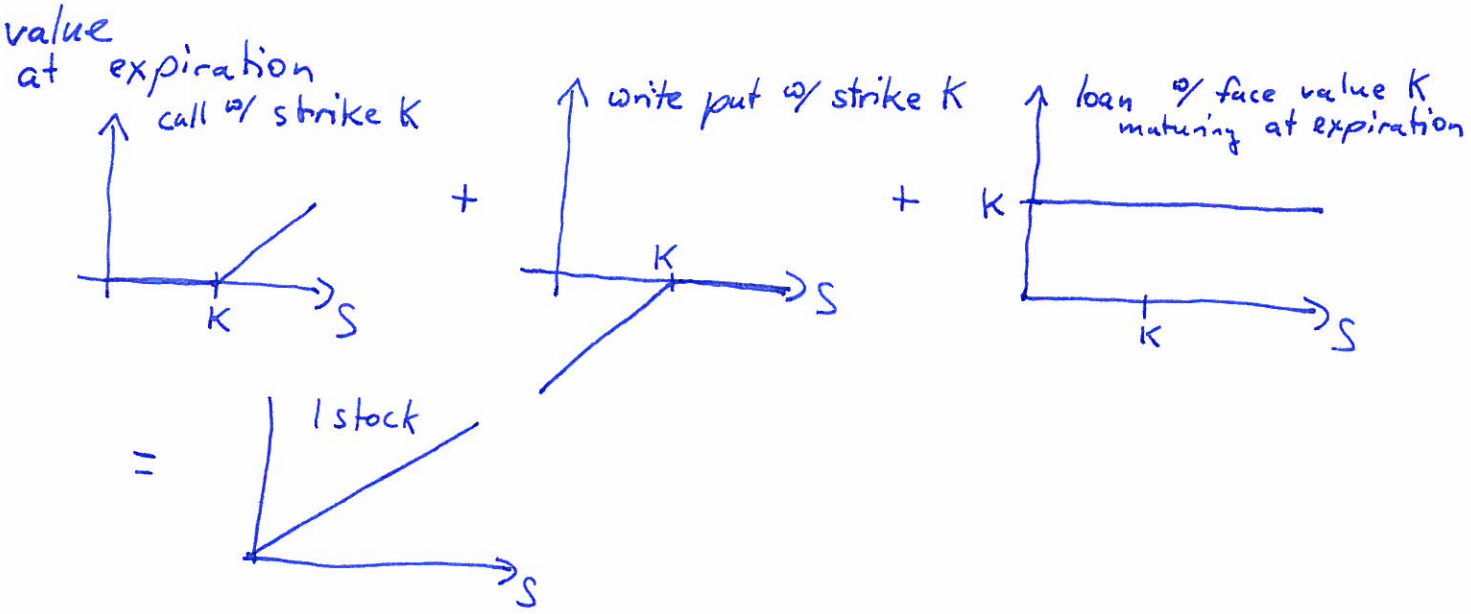


$C = \max(0, S-K)$



$P = \max(0, K-S)$

Put - Call Parity



before expiration:

C – price/premium of European call expiring at time T and with strike K

P – premium of European put expiring at time T and with strike K

$K(1+r_f)^{-T}$ – value of risk-free loan paying K at time T

r_f – risk free rate (e.g. yield of US gov't bonds)

S – price of the underlying stock

formula: $C - P + K(1+r_f)^{-T} = S$