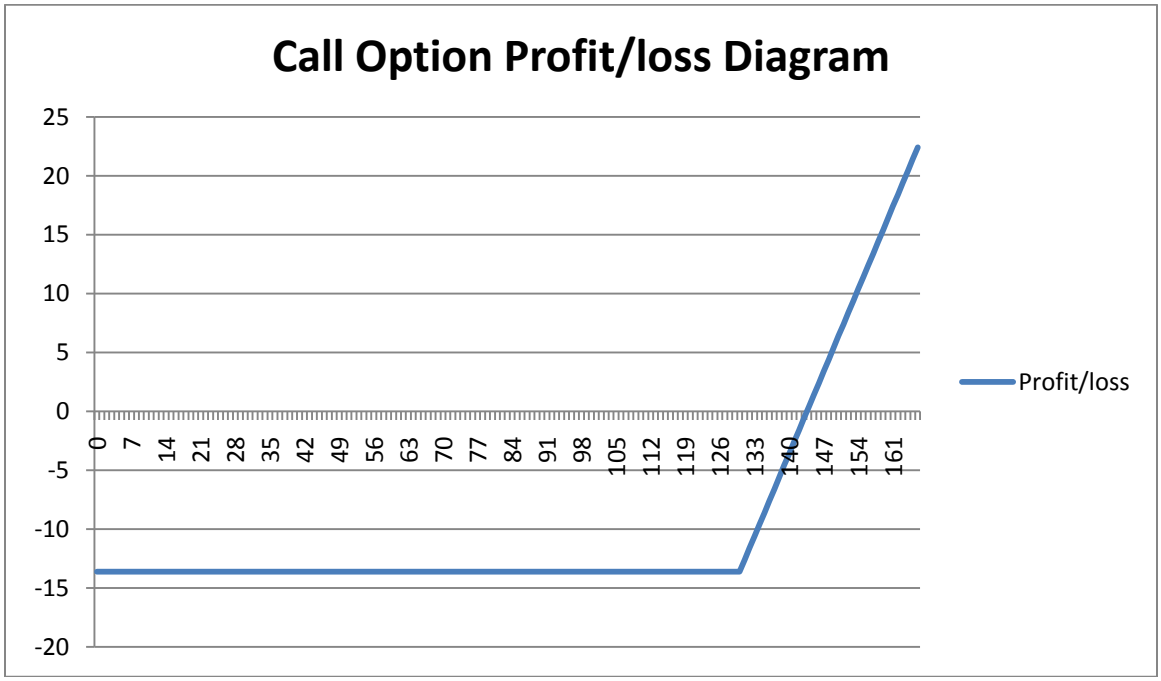
Solution to Fin 533 Homework
Due Thursday, November 17, 2009

1.
"A straddle is a combination of buying both a call and a put on the same asset, each with the same exercise price and expiration date. The purpose is to profit from expected volatility."

a. Plot the profit/loss diagram (at option expiration) for a long call option with a strike price of $130.

Call Option

Stock Price at Option Expiration	Profit or loss		
$000.00	-$13.60 + $0	=	-$13.60
$130.00	-$13.60 + $0	=	-$13.60
$143.60	-$13.60 + ($143.60 - $130.00)	=	$0.00

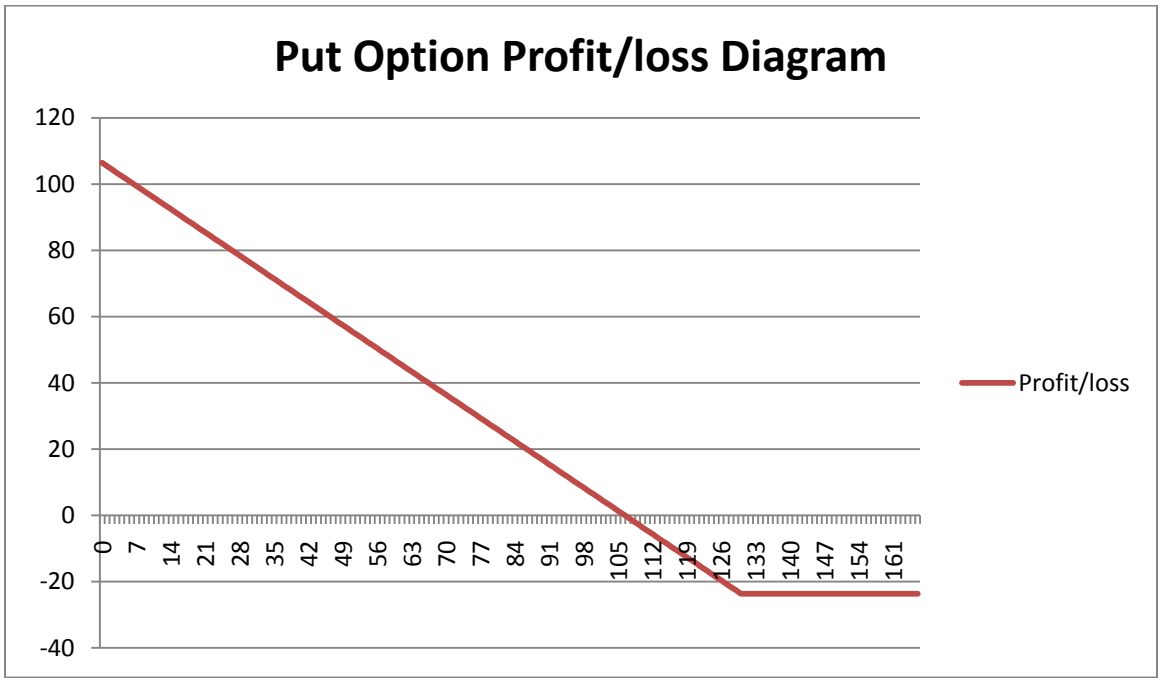


Max loss = $13.60
Breakeven at a stock price of $143.60
Max gain is unlimited

b. Plot the profit/loss diagram (at option expiration) for a long put option with a strike price of $130.

Put Option

Stock Price at Option Expiration	Profit or loss		
$000.00	-$23.60 + ($130.00 - $0)	=	$106.40
$106.40	-$23.60 + ($130.00 - $106.40)	=	$0.00
$130.00	-$23.60 + $0	=	-$23.60

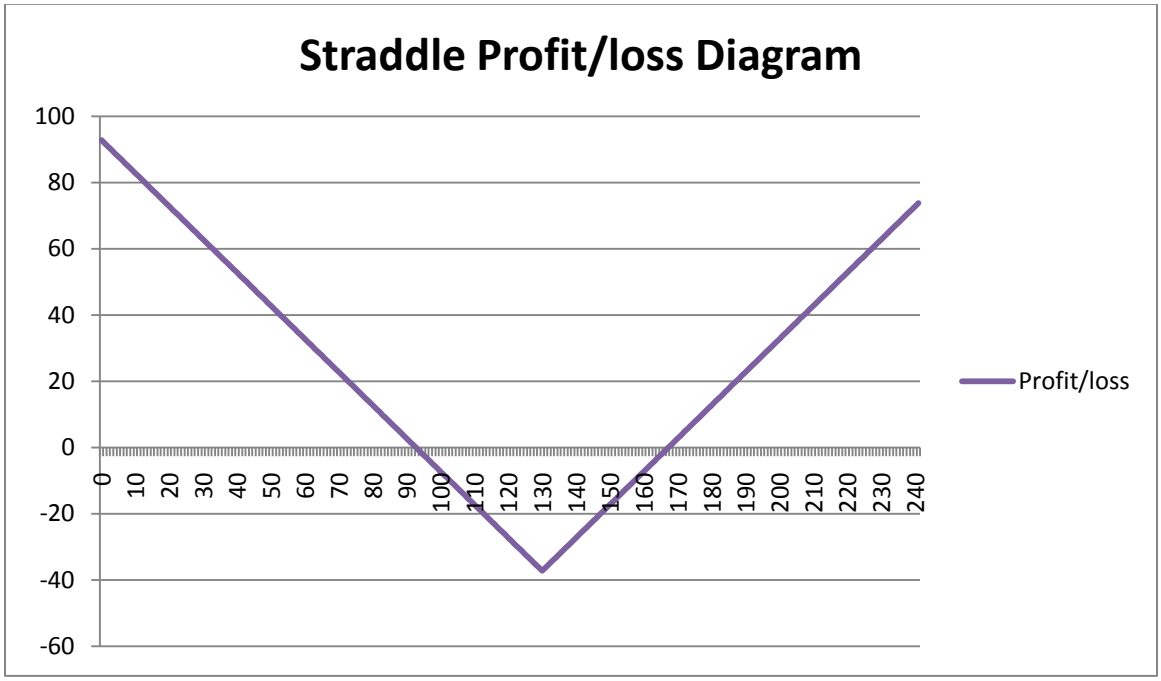


Max loss = $23.60
Breakeven at a stock price of $106.40
Max gain = $106.40

c. Consolidate the long call and the long put into one diagram.

Straddle Position

Stock Price at Option Expiration	Profit or loss		
$000.00	-$13.60 + 0 - $23.60 + ($130.00 - $0)	=	$92.80
$ 92.80	-$13.60 + 0 - $23.60 + ($130.00 - $92.80)	=	$0.00
$106.40	-$13.60 + 0 - $23.60 + ($130.00 - $106.40)	=	-$13.60
$130.00	-$13.60 + 0 - $23.60 + $0	=	-$37.20
$143.60	-$13.60 + ($143.60 - $130.00) -$23.60 + 0	=	-$23.60
$167.20	-$13.60 + ($167.20 - $130.00) - $23.60 + 0	=	$0.00



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Max loss = $37.20 at a stock price of $130.00
Breakeven at a stock prices of $92.80 and $167.20
Max gain is on the downside is $92.80 and unlimited on the upside