Econ 337 Spring 2016
Midterm 3/8/2016
100 points possible

Fill in the blanks (2 points each)

1. A put option contains the right to ______________________ a futures contract.

2. A call option contains the right to ______________________ a futures contract.

3. A futures contract is a legally binding contract to ___________ or ___________ delivery of the commodity.

4. ____________________ – holding equal and opposite positions in the cash and futures markets.

5. If I take a long position in the futures market, then I have ______________ a futures contract.

6. On Mar. 4, 2016, the March 2016 corn futures price was $3.55 per bushel. If the corn cash price was $3.25 per bushel, then the basis is $____________.

7. On Mar. 4, 2016, the July 2016 corn futures price was $3.64 per bushel. If a put option with a $3.60 strike price has a premium of 15 cents, what is the time value of the option?

____

8. On Mar. 4, 2016, the July 2016 corn futures price was $3.64 per bushel. If a call option with a $3.60 strike price has a premium of 18 cents, what is the intrinsic value of the option?

____

True or False (2 points each)

9. T F Basis = Cash price – Futures price

10. T F Crop insurance is subsidized by the federal government.

11. T F Put and call option premiums are set by the CME Group, the entity that runs the futures and options markets.

12. T F The main reason crops fail is disease.

13. T F Speculators have no use for the physical commodity.

14. T F A “bull” thinks prices will decline.

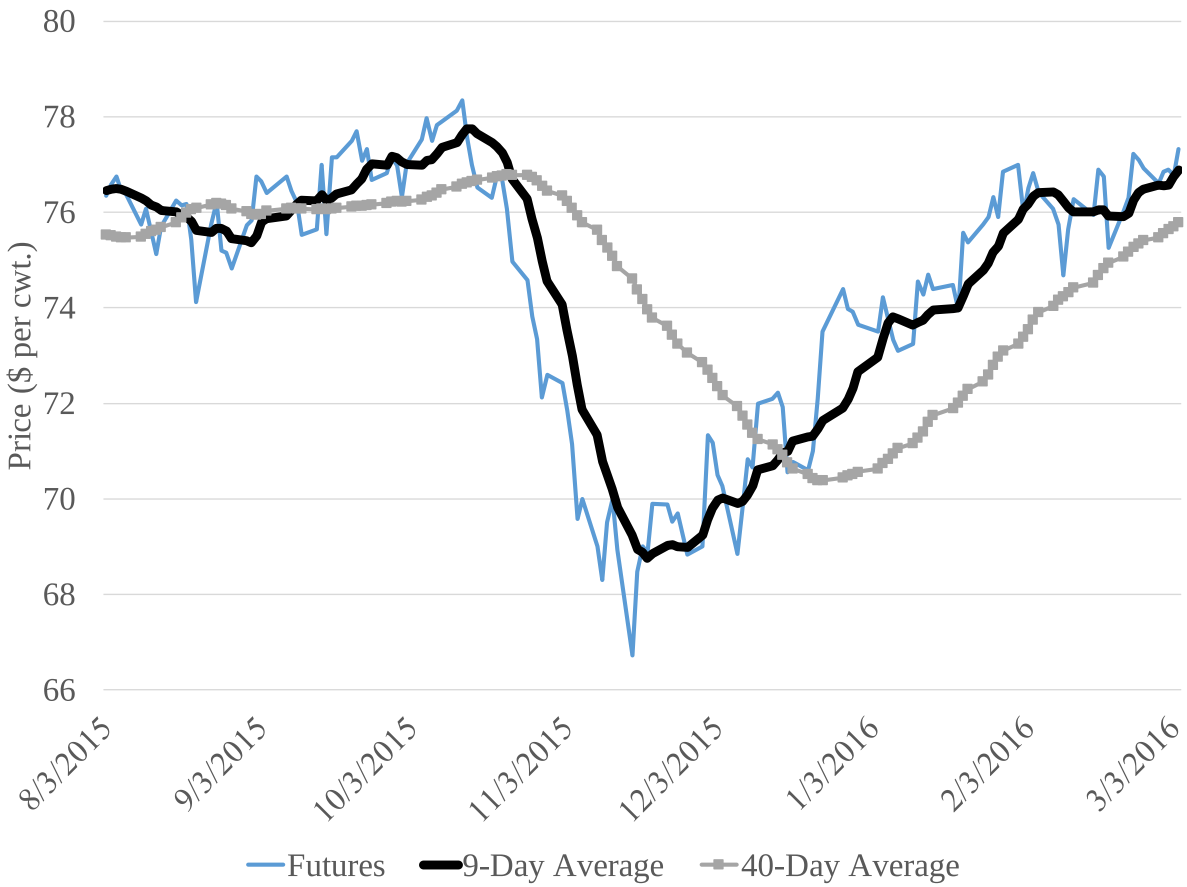
15. T F The last 4 soybean crops are the 4 largest soybean crops the U.S. has ever had.

16. T F The only person guaranteed to make money on an options trade is the broker.

Short Answer (2 points each)
17. How many bushels are in 10 corn futures contracts?

18. What is the settlement price on the April 2016 live cattle futures today (March 8, 2016)?

Short Answer (4 points each)
19. Below are the futures prices, 9-day, and 40-day moving averages for May 2016 lean hogs.



In looking at the 9-day versus the 40-day average:
How many buy signals have we had since last August?

What was the last signal (buy or sell) we received?

20. For 2016, you have an expected corn yield of 175 bushels per acre on your farm, based on your previous corn yields. The spring time insurance price for corn is $3.86 per bushel.

a) If you get 75 bushels per acre in 2016 and the harvest time price was $5.00 per bushel, what would be the insurance payment if you bought 80% yield insurance?

b) If you got 75 bushels per acre in 2016 and the harvest time price was $5.00 per bushel, what would be the insurance payment if you bought 80% revenue insurance (with the harvest price option)?

21. Name 4 of the 5 factors that affect the value of an option premium.

22. I put on a short hedge using Nov. 2016 soybean futures on March 4. To do that did I buy or sell a futures contract?

The futures price was $8.91 per bushel. If my expected basis is -$0.50 per bushel and the broker charges me a 2 cent per bushel commission, what is my expected price under the short hedge?

23. I purchased a Dec. 2016 corn put option with a \$4.00 strike price. The premium was 42 cents. If my expected basis is -\$0.20 per bushel and my broker charges me a 1 cent per bushel commission, what is my floor price with this option?

The Dec. 2016 corn futures prices was \$3.78 when I purchased the option. What is the intrinsic value of the option?

24. If the government reports that the butter price is \$2.15 per pound and the nonfat dry milk price is \$0.8216 per pound, what the Class IV Milk price?

Matching (1 point each)

Answer questions matching the following action to the appropriate statement. Terms may be used more than once.

a) Sell a call option	c) Sell a put option	e) Sell a futures contract
b) Buy a call option	d) Buy a put option	f) Buy a futures contract

25. ______ Receive payment into a margin account if futures price increases.

26. ______ Receive payment into a margin account if futures price decreases.

27. ______ Have the right, but not the obligation, to buy a futures contract at the strike price.

28. ______ Have the right, but not the obligation, to sell a futures contract at the strike price.

29. ______ Receive a premium, but maybe obligated to sell a futures contract at the strike price.

30. ______ Receive a premium, but maybe obligated to buy a futures contract at the strike price.

Long Answer (6 points each)

31. Given the data below, compute a 14-day Relative Strength Index for Nov. 2016 soybeans.

Date	Futures Price
2/12/2016	8.86
2/16/2016	8.91
2/17/2016	8.9275
2/18/2016	8.905
2/19/2016	8.885
2/22/2016	8.915
2/23/2016	8.8225
2/24/2016	8.8275
2/25/2016	8.7675
2/26/2016	8.76
2/29/2016	8.735
3/1/2016	8.70
3/2/2016	8.75
3/3/2016	8.78
3/4/2016	8.91

Margins (12 points)

32. I am a hedger that went short on December 2016 corn on Feb. 29, 2016 at $3.7575 per bushel. The initial margin requirement is $1,100. The maintenance margin is $1,000. Fill out my margin account for one futures contract.

Date	Futures Price	Gain/Loss	Margin Call	Account Balance
2/29/2016	$3.7575	X	X	$1,100.00
3/1/2016	$3.7375			
3/2/2016	$3.745			
3/3/2016	$3.755			
3/4/2016	$3.78			

Math and Graph (16 points, please show your work)

33. A corn producer is using a hedge to protect against price risk. Her broker charges her a commission of 1 cent per bushel for each transaction. At the time, the Dec. 2016 corn futures price was $3.78. She expects a harvest time basis of -$0.25 per bushel.

Please graph the relevant cash price, futures return, and net price lines.

What is her expected price?

If the Dec. 2016 corn futures rises to $4.50, what is her expected net price?

If the Dec. 2016 corn futures falls to $3.50, but the harvest time basis improves to -$0.10, what is her expected net price?