

Name: _____

**ECON 337
Agricultural Marketing**

Spring 2013

Exam I

Due April 16, 2013 @ Start of Lab (or before)

Answer each of the following questions by circling True or False (2 points each).

1. True False From 2002 to 2012 the percent of U.S. hogs sold through negotiated-spot transactions has declined.
2. True False The balance sheet approach used by USDA to estimate consumption is a measure of demand rather than supply.
3. True False The dressing percentage for hogs is greater than the dressing percentage for cattle.
4. True False Putting on a crush hedge consists of buying live cattle and feeder cattle and selling corn.
5. True False Assuming the local cash price is generally lower than the futures price, an increase in transportation costs will narrow basis.
6. True False A call is in-the-money when the market price of the underlying commodity futures contract is above the strike price.

Answer each of the following questions by filling in the blank (2 points each).

7. _____ is the broad forces of supply and demand establishing a market clearing price for a commodity.
8. _____ is the process by which buyers and sellers arrive at a transaction price for a given quality and quantity of product at a given time and place.
9. _____ are willing to make or take physical delivery because they are producers or users of the commodity.
10. _____ have no use for the physical commodity and are attempting to profit from price movements.

Multiple Choice: Circle the appropriate response for each statement or question (2 points each).

11. Which of the following is not an advantage of forward pricing?
- More stable returns.
 - Avoiding large losses.
 - Always hitting the market high.
 - More predictable cash flow.
 - Better access to credit.
12. Some of the major advantages of a cash forward contract are
- local buyer, must deliver hogs, and possible wide basis.
 - flexible size, captive supply for packer, and no margin deposit.
 - simple, no margin deposit, and no basis risk.
 - possible marketing charge, possible wide basis, and local buyer.
13. Some of the discounts on forward contracts are
- carcass merit standards, sort loss, and time loss.
 - carcass merit standards, basis adjustment, and sort loss.
 - carcass merit standards, weight schedule, and futures loss.
 - weight schedule, sort loss, and over- or under-delivery.
14. The connection between lean hog options and the lean hog futures market is
- a lean hog option is the right to buy or sell lean hogs.
 - a lean hog option is the right to buy or sell the underlying lean hog futures contract.
 - that you must have a lean hog option to buy or sell lean hog futures.
 - none of these.
15. A lean hog “put” option
- is the right to sell a lean hog futures contract at a specified price within a given time period.
 - is the right to sell lean hogs in the cash market at a given strike price.
 - is the right to buy a lean hog futures contract at a specified price within a given time period.
 - all of these.
16. A lean hog “call” option
- is the right to sell a lean hog futures contract at a specified price within a given time period.
 - is the right to buy lean hogs in the cash market at a given strike price.
 - is the right to buy a lean hog futures contract at a specified price within a given time period.
 - all of these.

17. A difference in using options for price protection compared with hedging or cash contracting is
- an option position establishes a minimum selling price or maximum purchase price, but leaves the buyer in a position to benefit from favorable price changes.
 - hedging and cash contracting set an approximate selling price, regardless of later price changes.
 - there is no cost in using options unlike hedging or cash contracting.
 - a and b.
 - b and c.
18. Option premiums
- are paid up front.
 - are made up of intrinsic value and time value.
 - are the cost of buying specific options.
 - all of the above.
 - none of the above.
19. An option premium's time value
- is determined by when it is purchased during the trading day.
 - is determined by underlying futures price volatility and time to expiration.
 - never changes during the life of an option.
 - All of the above.
20. An option premium's intrinsic value
- determines if it is in-the-money or out-of-the-money.
 - is determined by the relationship between the strike price and the underlying futures price.
 - is positive for a "put" if the strike price is above the futures price.
 - all of the above.
21. The adjustments that must be made to an option strike price to obtain an estimate of the net price floor or ceiling include
- the expected basis on the futures contract and the commission cost.
 - the premium cost and the value of the underlying futures contract
 - the premium cost and the commission cost.
 - b & c
 - a & c

22. The difference between futures contracts and other contract arrangements is that futures contracts
- are standardized, negotiable, and traded on an organized exchange like the CME.
 - are offered at any local grain elevator.
 - are available only for lean hogs.
 - none of these.
23. Basis
- will determine the outcome of the hedge position when a futures position is liquidated.
 - is the difference between a futures contract price and the local cash price for the commodity.
 - being less volatile and more predictable than cash prices is an underlying assumption in any recommendation to hedge.
 - all of the above.
 - none of the above.
24. The amount of the basis
- is most critical as the contract approaches maturity or the futures position is liquidated.
 - is affected by local conditions, such as packer demand and local supply.
 - is the same for all producers.
 - a & c
 - a & b
25. The characteristic of a futures market and cash market price relationship that makes hedging feasible is
- basis is always constant throughout the life of the contract.
 - losses in the cash market are offset by losses in the futures market.
 - their tendency to converge as the contract approaches maturity.
 - all of the above.

Provide a complete answer to each of the following questions.

26. Consider a feedlot with a simple cost of production formula: purchase cost and cost of gain. The feedlot bought 750 pound steers at \$135/cwt and cost of gain will be \$105/cwt up to 1250 pounds and then the total cost of gain will increase 5% to go to 1275 pounds and 15% to go to 1300 pounds.

i. (5 points) What is the breakeven selling price (\$/cwt) for the steers at 1200, 1225, 1250, 1275, and 1300 pounds? Show your work.

ii. (5 points) A packer offered the feedlot \$125/cwt for the 1225 pound cattle today or a contract for \$130/cwt for the same cattle delivered at 1300 pounds in three weeks. What should the feedlot do? Why? [Use the breakeven prices you calculated above] Show your work.

27. A packer buyer is looking at a pen of cattle that they believe will grade 60% choice, 10% CAB, 5% Prime, and 25% Select. They also think there are 10% yield grade 4, 40% yield grade 1 or 2, and 5% will have carcasses that are over 1000 pounds. They have the following information (all in \$/cwt of carcass weight).

Base: Choice Yield Grade 3 = \$140	Yield Grade 4 = -\$11.00
Prime = \$14.00	Yield Grade 1 & 2 = \$4.00
Select = -\$8.00	Carcasses > 1000 pounds = -\$21.00
CAB = \$4.00	

i. (7 points) The farmer wants a flat “in-the-meat” bid. How much should the packer buyer bid for the cattle? Show your work.

ii. (3 points) If the farmer is willing to sell the cattle on the grid with a base price that is the same as the “in-the-meat” price the packer buyer offered should the packer buyer take the offer (assume the same premiums and discounts)? Why?

28. A producer markets 300 hogs a month and is interested in hedging the November and December production. The producer estimates the cost of production for these hogs to be \$53.30 per cwt on a live weight basis. The hogs typically yield 75 percent and have been averaging 52 percent lean at 260 pounds. The producer receives a net price after lean premiums and sort loss that is \$3.00 per cwt over the packer's base price. The December Lean Hog futures contract is trading at \$78.00 and the expected basis for the packer's base price for November and December is -\$3.50 and -\$2.50, respectively. Trading costs are estimated to be \$0.35 per cwt. Lean hog contracts are for 40000 pounds.

i. (2 points) What is the producer's cost of production on a carcass basis? Show your work.

ii. (2 points) What is the expected hedge price for the November and December marketings? Show your work.

iii. (1 point) Can the producer hedge a profit over total cost? Why?

The producer sold one contract in November and one in December. The initial margin is \$1,200 per contract. On November 10, the December contract closes at \$75.00. A producer buys back one contract at the close and sells 210 hogs for delivery the next morning at \$72.00, for a 49 percent lean base.

iv. (2 points) What is the net gain or loss in futures for the one futures contract closed out?

Show your work.

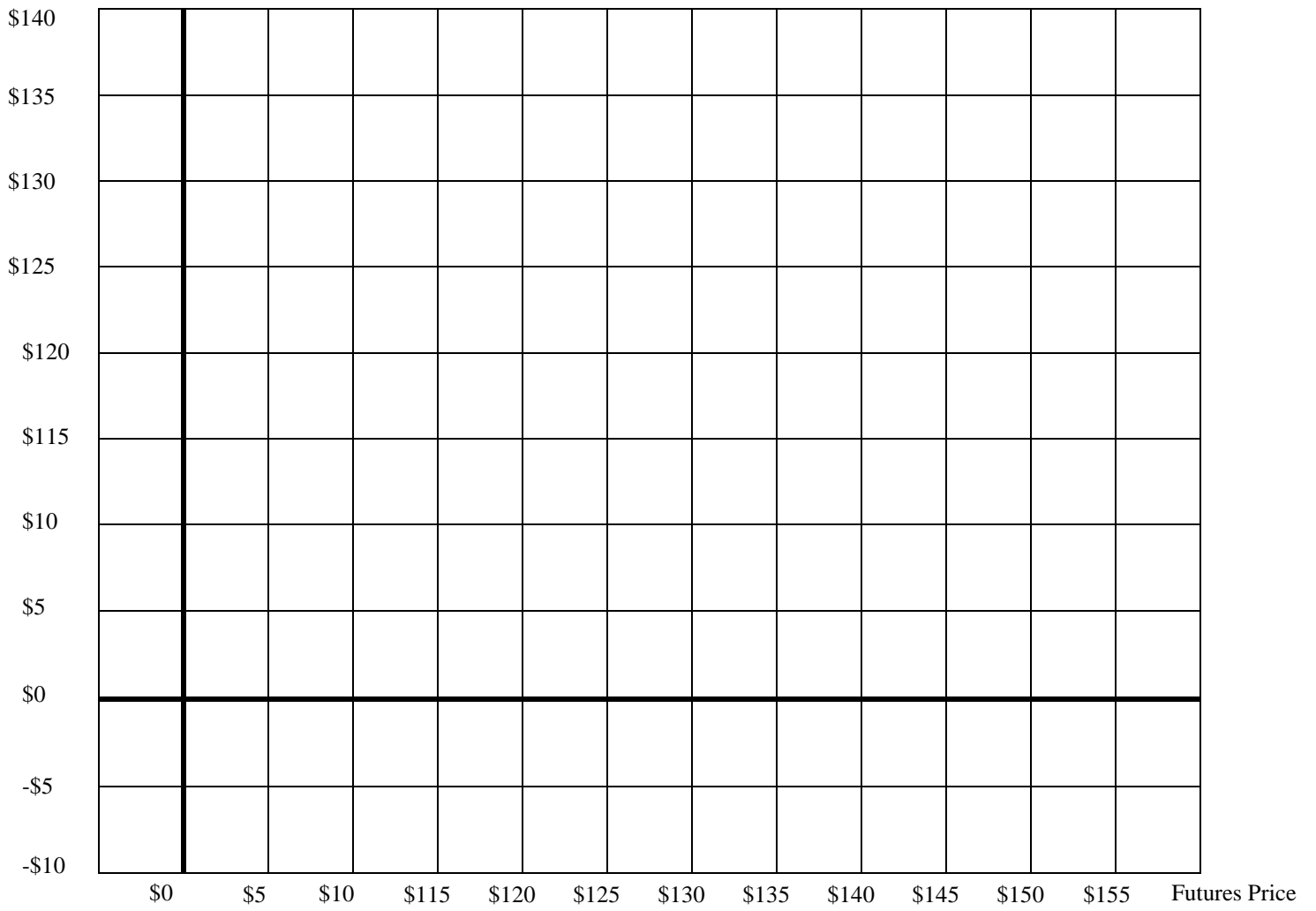
v. (4 points) The hogs weighed 258 pounds, dressed 74.8 percent and received a \$2.90/cwt of carcass premium after lean and sort factors were considered. Applying the futures gain or loss from (iv) to the 210 head sold, what is the producer's net price per cwt and total revenue? Show your work.

vi. (4 points) How much money is in the producer's margin account at the open November 11 after the one contract is closed out, before the funds are available? Show your work.

29. For the following questions use the attached futures and options data. Assume historical expected basis of $-\$0.24$ per cwt and a commission of $\$0.075$ per cwt.

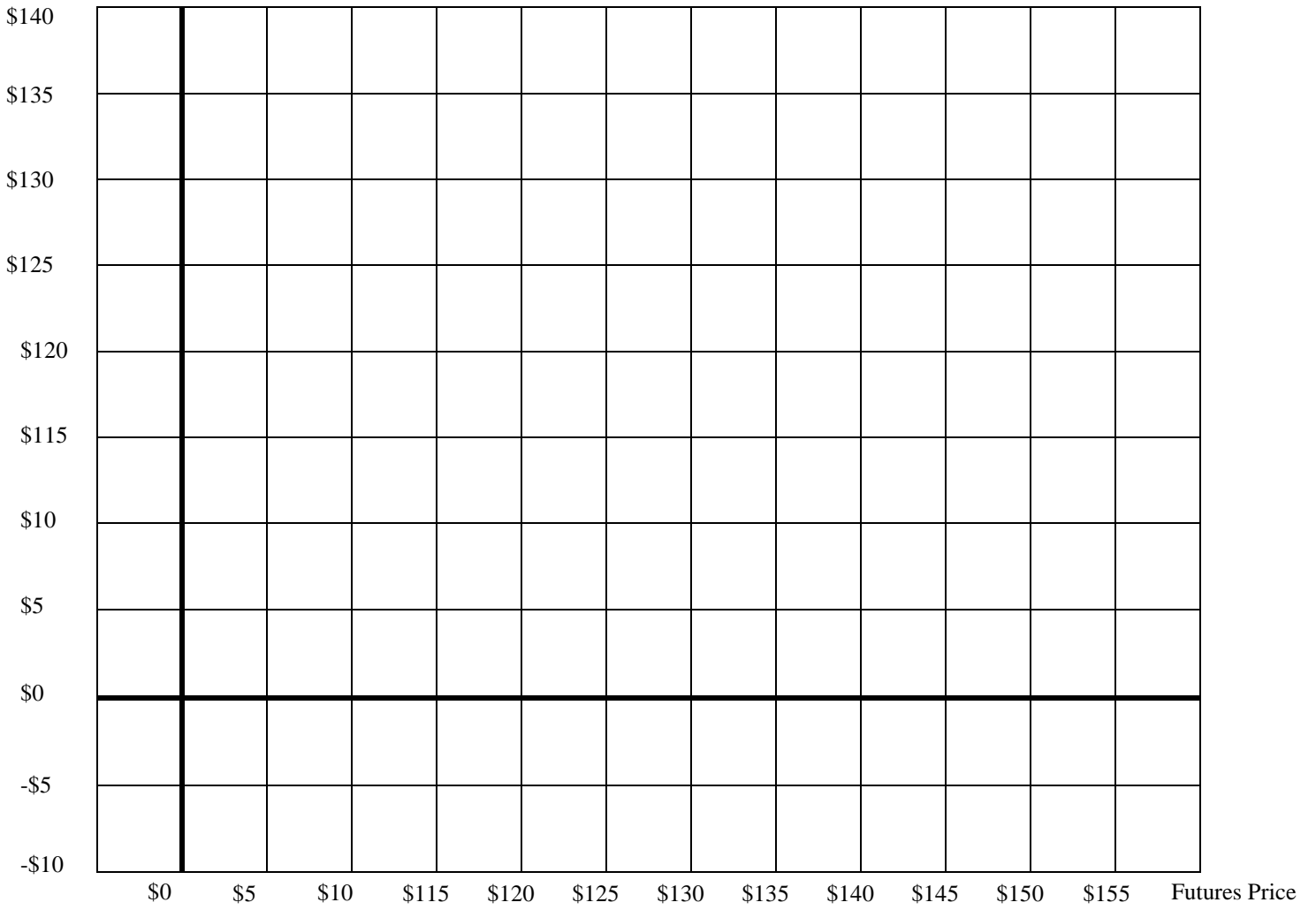
- i. (8 points) A hedger (producer) buys a \$120 put option on Dec 2013 live cattle futures. What is their floor price with the option in place? If the Dec 2013 live cattle futures price falls to \$116, what is their net price? Show the math and draw and label the graph.

Return/Net Price



- ii. (7 points) If the hedger in (i) also sold a \$136 call option on Dec 2013 live cattle futures, does that change their floor price? If so, what is the new floor price? How has their risks changed? Show the math and draw and label the graph.

Return/Net Price



All prices and premiums are listed in dollars per cwt

Dec 2013 Live Cattle

Futures 128.550
Price

Options	Strike Price	Premium	Options	Strike Price	Premium
Put	104	0.075	Call	104	24.550
Put	106	0.100	Call	106	22.575
Put	108	0.150	Call	108	20.625
Put	110	0.225	Call	110	18.700
Put	112	0.300	Call	112	16.775
Put	114	0.425	Call	114	14.900
Put	116	0.575	Call	116	13.050
Put	118	0.800	Call	118	11.300
Put	120	1.100	Call	120	9.600
Put	122	1.475	Call	122	8.000
Put	124	1.975	Call	124	6.500
Put	126	2.625	Call	126	5.150
Put	128	3.450	Call	128	4.000
Put	130	4.425	Call	130	2.975
Put	132	5.575	Call	132	2.150
Put	134	6.900	Call	134	1.475
Put	136	8.375	Call	136	0.975
Put	138	10.025	Call	138	0.625
Put	140	11.800	Call	140	0.400
Put	142	13.650	Call	142	0.250
Put	144	15.525	Call	144	0.125
Put	146	17.475	Call	146	0.075
Put	148	19.450	Call	148	0.050
Put	150	21.450	Call	150	0.050
Put	152	23.450	Call	152	0.050
Put	154	25.450	Call	154	0.025
Put	156	27.450	Call	156	0.025
Put	158	29.450	Call	158	0.025
Put	160	31.450	Call	160	0.025