Short answer (two points each):

1. Futures prices reflect _global_ supply and demand, while basis reflects _local_ supply and demand.

2. Ten corn futures contracts cover _50,000_ bushels.

3. Hedging: Holding _equal_ and _opposite_ positions in the futures and cash markets.

4. The nearby live cattle futures price is $130.00 per hundredweight. If the cash price for live cattle is $126 per hundredweight, then the basis is _-4.00_.

5. With a _put_ option, the buyer pays the premium and has the right, but not the obligation, to sell a futures contract at the strike price.

Long answer (five points each, please show your work):

For the following questions, assume the December 2013 corn futures are $5.50 per bushel, expected basis is -$0.30 per bushel, and a commission of $0.01 per bushel is paid on each transaction.

6. A hedger buys a $5.80 put option on December 2013 corn, paying a premium of 64 cents.
   a) What is her floor price?
   b) What is the intrinsic value of this option?
   c) What is the time value of this option?

   a) Floor Price = Strike Price + Basis – Premium – Commission
       = $5.80 - $0.30 - $0.64 - $0.01
       = $4.85

   b) Intrinsic value is what the option is worth today. For a put,
      Intrinsic value = max(0, Strike Price – Futures Price)
      = max(0, $5.80 - $5.50)
      = max(0, $0.30)
      = $0.30

   c) Option Premium = Intrinsic Value + Time Value,
      so Time Value = Option Premium – Intrinsic Value
      = $0.64 - $0.30
      = $0.34
For the following questions, assume the December 2013 corn futures are $5.50 per bushel, expected basis is -$0.30 per bushel, and a commission of $0.01 per bushel is paid on each transaction.

7. A producer does a short hedge on December 2013 corn.
   a) What is his expected price?
   b) What does his expected price change to if the basis moves to -$0.15 per bushel?

   a) Expected Price = Futures Price + Basis – Commission
                     = $5.50 - $0.30 - $0.01
                     = $5.19

   b) New Expected Price = Futures Price + New Basis – Commission
                          = $5.50 - $0.15 - $0.01
                          = $5.34

8. An ethanol plant buys a $4.50 call option on December 2013 corn, paying a premium of $1.12.
   a) What is their ceiling price?
   b) Which strategy provides a lower ceiling price, the $4.50 call or a long hedge?

   a) Ceiling Price = Strike Price + Basis + Premium + Commission
                     = $4.50 -$0.30 + $1.12 + $0.01
                     = $5.33

   b) Expected price from a long hedge is:
       Expected Price = Futures Price + Basis + Commission
                      = $5.50 - $0.30 + $0.01
                      = $5.21

       So the long hedge provides a lower ceiling price ($5.21) than the $4.50 call ($5.33).