Below are several questions that will ask you to demonstrate your understanding of how these farm programs work. You will likely have to use the class overheads and/or the materials posted on the class web page to answer some them.

Farm Facts: Suppose a farmer owns a 160 acre FSA farm that includes 80 base acres for corn with a 145 bu/ac payment yield and 50 base acres of soybeans with a payment yield of 37 bu/ac. On that FSA farm in 2015, the farmer planted 110 ac of corn that had an average yield of 180 bu/ac, and 40 acres of soybeans that had an average yield of 55 bu/ac, and has 10 acres of alfalfa.

Suppose that in September 2016, the USDA announces that the 2015 national marketing year average price is $3.50 for corn and $8.50 for soybeans. Suppose the farm is in Smith County, WI (not real) and the USDA announced a 2015 county ARC guarantee of $720/ac for corn and $430 for soybeans for Smith County, WI. Suppose in June 2016, the USDA announces that the actual 2015 average corn yield in Smith County is 180 bu/ac and 50 bu/ac for soybeans.

A. Price Loss Coverage (PLC)
Suppose the farmer signed up for PLC for both the corn and soybeans.

1. What events trigger a corn PLC payment and a soybean PLC payment for this farm?
   National marketing year average prices below the reference prices of $3.70 for corn and $8.40 for soybeans.

2. What will the farm’s PLC payments be for the 2015 crop year?
   Corn PLC payment rate = $3.70 – $3.50 = $0.20
   Corn PLC payment = 85% x 80 corn base acres x 145 bu/ac x $0.20/bu = $1,972
   Soybean PLC payment rate = $8.40 – $8.50 = -$0.10 <0, so = 0
   Soybean PLC payment = 85% x 40 soybean base acres x 37 bu/ac x $0/bu = $0

3. If the farmer had planted all 160 acres in corn, how would the PLC payments change?
   PLC payments would not change, as they depend on base acres, not actual planted acres.

4. If the farmer had planted all 160 acres in alfalfa, how would the PLC payments change?
   PLC payments would not change, as they depend on base acres, not actual planted acres, even for different non-vegetable and non-fruit crops.

5. How would the farm’s PLC payments change if the farmer used futures markets to sell the corn for $4.50/bu and the soybeans for $12.60/bu?
   PLC payments would not change, as they depend on national marketing year average prices, not actual prices the farmer receives for the crops.
6. How would the farm’s PLC payments change if the farmer had sold the corn at harvest for $3.20/bu and the soybeans for $8.10/bu?

   PLC payments would not change, as they depend on national marketing year average prices, not actual prices the farmer receives for the crops.

7. How would the farm’s PLC payments change if the farm’s actual harvested yields for 2015 were 100 bu/ac for the corn and 20 bu/ac for the soybeans?

   PLC payments would not change, as they depend on payment yields for base acres, not actual yields for the crops.

B. County Agricultural Risk Coverage (ARC)

Suppose the farmer signed up for county ARC for both the corn and soybeans.

1. What events trigger a county ARC payment for corn and for soybean for this farm?

   Actual county revenue for a crop less than the county revenue guarantee for that crop.

2. What are the farm’s county ARC payments for the 2015 crop year?

   Actual county revenue is calculated as actual county average yield x national marketing year average price. ARC payment rate is the revenue guarantee minus the actual county revenue, with this payment rate equal to zero if this difference is negative and this payment has a maximum amount equal to 10% of the county guarantee.

   For corn, actual county revenue = 180 x $3.50 = $630, which is less than the county revenue guarantee of $720/ac, so an ARC payment is triggered.

   ARC payment rate = 720 – 630 = $90/ac. However, the max ARC payment rate is 10% of the county guarantee = 10% of $720 = $72/ac, and so the ARC payment rate is set to its maximum of $72/ac.

   ARC payment = 85% x 80 corn base acres x $72/ac = $4,896.

   For soybean, actual county revenue = 50 x $8.50 = $425, which is less than the county revenue guarantee of $430/ac, so an ARC payment is triggered.

   ARC payment rate = 430 – 425 = $5/ac, which is less than the max ARC payment rate of 10% of county guarantee = 10% of $430 = $43/ac

   ARC payment = 85% x 50 soybean base acres x $5.00/ac = $212.50.

3. If the farmer had planted all 160 acres in corn, how would the ARC payments change?

   Not at all, ARC payments are based on base acres, not actual planted acres.

4. If the farmer had planted all 160 acres in alfalfa, how would the ARC payments change?

   Not at all, ARC payments are based on base acres, not actual planted acres, even for different non-vegetable and non-fruit crops.

5. How would the farm’s ARC payments change if the farmer used futures markets to sell the corn for $4.50/bu and the soybeans for $12.60/bu?
Not at all, ARC payments are based on actual county revenue which uses the national marketing year average price, not the farmer’s actual price received.

6. How would the farm’s ARC payments change if the farmer sold the corn at harvest for $3.20/bu and the soybeans for $8.10/bu?
   Not at all, ARC payments are based on actual county revenue which uses the national marketing year average price, not the farmer’s actual price received.

7. How would the farm’s ARC payments change if the farm’s actual harvested yields for 2015 were 100 bu/ac for the corn and 20 bu/ac for the soybeans?
   Not at all, ARC payments are based on county average yield, not the farm’s actual yield.

C. Marketing Assistance Loans

1. How many bushels of corn and of soybeans did the farmer harvest in 2015?
   Corn: 110 acres x 180bu/ac = 19,800 bu.  
   Soybean: 40 acres x 55 bu/ac = 2,200 bu.

2. If the farmer enrolled all of the harvested corn and half of the harvested soybeans, how large of a Marketing Assistance Loan would the farm receive?
   Corn: enroll 19,800 at $1.95/bu corn loan rate = $38,610.  
   Soybean: enroll ½ of 2,200 bu = 1,100 bu at $5.00/bu soybean loan rate = $5,500.  
   Total MAL = $38,610 + $5,500 = $44,110.

3. The farmer pays back the corn Marketing Assistance Loan on January 15th when the posted county price is $3.50/bu.  Would the farmer receive a Loan Deficiency Payment?  Ignoring interest payments, processing fees, and tax issues, how much does the farmer pay back?
   No loan deficiency payment pays since posted county price of $3.50/bu exceeds the corn loan rate of $1.95/bu.  Thus the farmer would pay back the same amount borrowed, ignoring interest payments and processing fees, or $38,610.

4. Suppose instead the farmer pays back the corn Marketing Assistance Loan on April 1st when the posted county price is $1.90/bu.  Would the farmer receive a Loan Deficiency Payment?  Ignoring interest payments and processing fees, how much does the farmer pay back?
   Yes, because posted county price ($1.90) is less than the loan rate ($1.95).  The farmer would pay back the loan at the $1.90/bu posted county price – the farmer received $38,610 as a loan, but pays back $1.90 x 19,800 = $37,620, or $990 less than borrowed.  The farmer receives a $0.05/bu loan deficiency payment, since 0.05 x 19,800 = 990.