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 90 base acres for corn with a 160 bu/ac payment yield and 50 base acres of soybeans with a payment yield of 40 bu/ac. On that FSA farm in 2018, 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 60 bu/ac, and has 10 acres of alfalfa that over all cuttings yielded 6 tons/ac.

Suppose that in September 2019, the USDA announced that the 2018 national marketing year average price is $3.61 for corn and $8.38 for soybeans. Suppose the farm is in Smith County, WI (not real) and the USDA announced a 2018 county ARC guarantee of $685/ac for corn and $415 for soybeans for Smith County, WI. Suppose in June 2019, the USDA announces that the actual 2018 average corn yield in Smith County is 171 bu/ac and 46 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?

2. What are the farm’s PLC payments for corn and soybeans for the 2018 crop year?

3. How would the PLC payments change if the farmer had planted all 160 acres in soybeans?

4. How would the PLC payments change if the farmer had planted all 160 acres in alfalfa?

5. How would the farm’s PLC payments change if the farmer used futures markets to sell the corn for $3.75/bu and the soybeans for $9.18/bu?
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?

7. How would the farm’s PLC payments change if the farm’s actual harvested yields for 2018 were 110 bu/ac for the corn and 28 bu/ac for the soybeans?

B. County Agricultural Risk Coverage (ARC)
Instead, 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?

2. What are the farm’s county ARC payments for the 2018 crop year?

3. How would the ARC payments change if the farmer had planted all 160 acres in corn?

4. How would the ARC payments change if the farmer had planted all 160 acres in alfalfa?

5. How would the farm’s PLC payments change if the farmer used futures markets to sell the corn for $3.75/bu and the soybeans for $9.18/bu?

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?
7. How would the farm’s PLC payments change if the farm’s actual harvested yields for 2018 were 110 bu/ac for the corn and 28 bu/ac for the soybeans?

C. Marketing Assistance Loans
1. How many bushels of corn and of soybeans did the farmer harvest in 2018?

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 using the national loan rates of $1.95 for corn and $5.00 for soybeans?

3. The farmer pays back the corn Marketing Assistance Loan on January 15th when the posted county price is $3.55/bu. Would the farmer receive a Loan Deficiency Payment? Ignoring interest payments and processing fees, how much does the farmer pay back?

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?