True or False (one point each):

1. Over half of the U.S. corn crop is typically planted by the middle of May.

True, by May 10, typically 68% of the U.S. corn crop is planted.

2. Direct payment rates change with crop prices.

False, direct payment rates are set by law and do not change with crop prices.

3. Countercyclical payment rates change with crop prices.

True, countercyclical payment rates change with crop prices.

\[
\text{Countercyclical Payment Rate} = \text{Max}(0, \text{Target Price} - \text{Direct Payment Rate} - \text{Max}(\text{National Loan Rate}, \text{National Season Average Price}))
\]

4. You can pay back a marketing loan using the crop, instead of cash.

True, the loans are nonrecourse, meaning that you can forfeit the crop to the government as payment for the loan.

5. There are two triggers for the ACRE program, a state-level revenue trigger and a farm-level revenue trigger.

True, there are two triggers, a state-level revenue and a farm-level revenue trigger.

The state-level revenue trigger is the ACRE revenue guarantee = 90% * ACRE price guarantee * Expected state yield.

The farm-level revenue trigger is the ACRE Farm revenue trigger = Expected farm yield * ACRE price guarantee + Producer-paid crop insurance premium

6. SURE pays the entire difference between the farm guarantee and the actual farm revenue.

False, SURE will pay 60% of the difference between the farm guarantee and the actual farm revenue.
7. a) Calculate the per-acre soybean direct payment if the soybean direct payment yield is 32 bushels per acre.

Per-acre Direct Payment = 83.3% * Direct Payment Yield * Direct Payment Rate
= 83.3% * 32 bu/acre * $0.44/bu = $11.73/acre

b) Given your answer on 7. a), how many soybean base (or payment) acres would the farm need to have in order to receive $5,000 in soybean direct payments?

$5,000/($11.73/acre) = 426.26 acres

8. a) What would be the soybean countercyclical payment rate in 2009 if the national season-average price was $5.20 per bushel?

Countercyclical Payment Rate = Max(0, Target Price – Direct Payment Rate – Max(National Loan Rate, National Season Average Price))
= Max(0, $5.80/bu – $0.44/bu – Max($5.00/bu, $5.20/bu)) = $0.16/bu

b) What would be the soybean countercyclical payment rate in 2009 if the national season-average price was $6.20 per bushel?

Countercyclical Payment Rate = Max(0, Target Price – Direct Payment Rate – Max(National Loan Rate, National Season Average Price))
= Max(0, $5.80/bu – $0.44/bu – Max($5.00/bu, $6.20/bu)) = $0.00/bu

9. For 2009, the set-up for ACRE for Iowa corn is an expected state yield of 171 bushels per acre and an ACRE price guarantee of $4.15 per bushel. Your farm has an expected farm yield (based on a 5-year Olympic average) of 171 bushels per acre. You have also purchased crop insurance and paid $22.61 per acre for it.

a) What are the ACRE revenue guarantee and the ACRE farm revenue trigger in this case?

ACRE revenue guarantee = 90% * ACRE price guarantee * Expected state yield
= 90% * $4.15/bu * 171 bu/acre = $638.69/acre

ACRE Farm revenue trigger = Expected farm yield * ACRE price guarantee + Producer-paid crop insurance premium
= $4.15/bu * 171 bu/acre + $22.61/acre = $732.26/acre

b) If, for 2009, the actual state yield is 165 bushels per acre, the actual farm yield is 190 bushels per acre, and the season-average price is $3.50 per bushel, then what is the ACRE payment rate?

ACRE actual revenue = Max(Season-average price, Loan rate) * Actual state yield per planted acre
= Max($3.50/bu, $1.95/bu) * 165 bu/acre = $577.50/acre

Since this is less than the ACRE revenue guarantee ($577.50 < $638.69), the state trigger is met.
ACRE actual farm revenue = Max(Season-average price, Loan rate) * Actual farm yield per planted acre
   = Max($3.50/bu, $1.95/bu) * 190 bu/acre = $665.00/acre
Since this is less than the ACRE farm revenue trigger ($665.00 < $732.26), the farm trigger is met.

ACRE Payment rate = Min(ACRE revenue guarantee – ACRE actual revenue, 25% * ACRE revenue guarantee)
   = Min($638.69/acre – $577.50/acre, 25% * $638.69/acre) = $61.19/acre