

I pledge my honor that I have neither given nor received aid on this exam.

\_\_\_\_\_  
NAME

\_\_\_\_\_  
SSN (last 4 digits)

Show all work (attach work pages). Write on one side of page only. Write answers in space provided. Staple in upper left-hand corner.

Consider a pair of identical-looking dice. One of the dice is ordinary (six equally-likely faces, numbered 1,2,...,6), but the other is "loaded." That is, the loaded die is weighted so that the probability of rolling a 6 is  $3/12$  and the probability of rolling a 1 (the opposite face) is  $1/12$ ; the other faces remain equally likely at  $1/6$ .

Fran selects a die at random, and Ron gets the other die.  
Fran and Ron roll their dice simultaneously.

1. Find the probability that the value of the roll (the sum of the face values of the two dice) is 6. 1) \_\_\_\_\_
2. Find the probability that Fran rolls a 6. 2) \_\_\_\_\_
3. Find the probability that Ron rolls a 6. 3) \_\_\_\_\_
4. Find the probability that Fran rolls a 6 and Ron rolls a 6. 4) \_\_\_\_\_
5. Find the probability that Fran rolls a 6 if it is known that Ron rolled a 6. 5) \_\_\_\_\_
6. Suppose that Fran rolls her die a second time. If her first roll produced a 6, find the probability that her second roll will also produce a 6. 6) \_\_\_\_\_
7. Find the probability that Fran's value equals Ron's value. 7) \_\_\_\_\_
8. Find the probability that Fran's value is larger than Ron's value. 8) \_\_\_\_\_