Honors Statistics **Name_____**
3.4 Worksheet **Period_____Date_____**

Are these events independent or dependent? Explain.

1. Rolling a red die and a green die.

2. Selecting a red card from a deck of cards, replacing it, and then selecting another red card.

3. Taking a five question true/false quiz and guessing at each question.

4. Tossing a coin and then rolling a die.

5. Selecting two cards from a deck of cards without replacing the first one before drawing the second.

A coin is tossed, then a die is rolled. Find the probability of each outcome.

6. heads and a 6

7. heads and a number less than 5

8. tails and a 5

9. tails and an odd number

10. tails and a number that is a multiple of 3

11. tails and a 2 or a 3

12. heads and a number greater than 2

A bag contains 3 red and 4 white marbles. A second bag contains 6 yellow and 3 green marbles. One marble is selected from each bag. Find the probability of each outcome.

13. a red and a yellow

14. a red and a green

15. a white and a green

16. a white and a yellow

What's the probability of randomly selecting

17. two people that are born on July 4th?

18. three people that are born on July 4th?

19. two people that match birthdays?

20. three people that match birthdays?

In a bag there are 3 red marbles, 2 white marbles, and 4 blue marbles. Find the probability of selecting

21. a red marble and then a white marble (with replacement)

22. 2 blue marbles in a row (with replacement)

23. a white marble and then a blue marble (with replacement)

24. 2 white marbles in a row (with replacement)

25. 3 red marbles in a row (with replacement)

26. a red marble and then a white marble (without replacement)

27. 2 blue marbles in a row (without replacement)

28. a white marble and then a blue marble (without replacement)

29. 2 white marbles in a row (without replacement)

30. 3 red marbles in a row (without replacement)

Fran is taking a three question multiple choice test. There are four choices for each question. Suppose she guesses the answer to each question. What's the probability that she answers

31. all of them correctly?

32. all of them incorrectly?

33. the first question correctly and the next two incorrectly?

Telektronics claims the defect rate for their DVD's is 6%. In a batch of 200 DVD's, 2 DVD's are randomly selected.

34. In a batch of 200 DVD's, how many would you expect to be defective?

35. Assuming the first DVD is replaced before the next one is selected, find the probability that they are both defective.

36. Assuming the first DVD is not replaced before the second item is selected, find the probability that they are both defective.

37. Compare the results from #35 and #36. Are they probabilities very different? In these situations, most manufacturers will assume independence when calculating the probability as long as the sample size is less than 5% of the population.