I'm Not So Sure Anymore
Activity 3 Notes Day 1

Name:
Date: *Hr:*

Define: (p. 194)

Expected Value -

How do you calculate Expected Value?

Fair Game -

Example 1:
In one state lottery, players select 4 numbers from 1-28. Tickets cost $0.50 each. The table below shows the values of the prizes in this lottery.

# of Matches	Prize	Probability of Winning with One Ticket
4	$10,000	1/363,000
3	$500	180/363,000
2	$1	6097/363,000

a) If a player buys ONE ticket, what is the expected value of the game? Describe how you determined your response.

b) Can players make the lottery a fair game by buying more than one ticket? Explain!

Example 2:
You have decided to play the NEW Apple Lottery. The cost of a ticket is $1.00. The table below shows the values of the prizes in this lottery.

Event	Prize	Wins	Experimental Probability	Expected Winnings
Matching 2 numbers	$3.00			
Matching 1 numbers	$1.00			
Matching 0 numbers	$0			

a) Use your calculator to play the NEW Apple Lottery 20 times. Determine the number of times you won each prize and enter your results in the WINS column above.

b) Complete the last 2 columns of the chart.

c) Determine the expected value of Apple Lottery.

d) Is the NEW Apple Lottery a fair game? Why or Why Not?

Example 3:
Imagine you have purchased one ticket for a benefit raffle. A total of 600 tickets have been sold for $2 each. From these tickets, one winner will be chosen at random. The prize is worth $250.

a) Determine the probability that you will win the game.

b) What is the expected value of this raffle for one ticket?

c) Is the raffle a fair game? Explain!