FREC 408

Assignment 2

Issued:  September 23, 1999

Due:  End of class, October 5, 1999

Be sure to:
• Put your name and the Assignment # on the front
• Answer as completely as you can. All I can go on is what you give me, so show your work.
• Be as neat as possible. You can write it out, but please be neat.
• Staple or place in a folder

1. Answer Exercise 3.7 on page 101 in Chapter 3 (Toss of die and coin) 10 pts
2. Answer Exercise 3.12 on page 102 in Chapter 3 (genetic makeup) 10 pts
3. Answer Exercise 3.16 on page 103 in Chapter 3 (carbon monoxide) 10 pts
4. Answer Exercise 3.20 on page 111 in Chapter 3 (Toss of fair coin) 10 pts
5. Answer Exercise 3.41 on page 118 in Chapter 3 (Go game in Japan) 15 pts
6. Answer Exercise 3.43 on page 119 in Chapter 3 (carbon monoxide) 15 pts
7. Answer Exercise 3.59 on page 130 in Chapter 3 (craps) 15 pts
8. I want each person in the class to run an experiment on playing Solitaire on the computer. In order to do this you need to get on any computer with solitaire and set the game up in the following way.
   • Under GAME picks OPTIONS
   • Pick draw three
   • Pick Vegas Style
   • Pick Keep Score

Vegas Style plays a game where it costs you $52 to play one hand. The draw three options turns the deck over three cards at a time and let’s you go through the deck three times. You get $5 for each card you place on the top (i.e., Ace, two, three… of a suit). If you get all 52 cards on top you would get back $208 \( (52 \times 5) - 52 \)

It is very hard to a priori determine the odds of winning, so we will do an experiment to see. If each person plays 12 games we will have over 500 trials. I will tally the results.

I want you to play 12 games and keep track of the winnings for each game. By this I mean mark done the result after the game, quit Solitaire, and then start it again. Make a table with the winnings (or losings) for each hand. Then answer the following two questions.

Example:

<table>
<thead>
<tr>
<th>Hand</th>
<th>Winnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$12</td>
</tr>
<tr>
<td>2</td>
<td>-$52</td>
</tr>
<tr>
<td>3</td>
<td>$75</td>
</tr>
</tbody>
</table>

1. Based on your own twelve games, what do you expect is the average winnings per hand?
2. What factors do you think would influence the outcome of this class experiment? Any sources of bias?