Math 1342 Sample Test 2

Probabilities Section 4.2 - 4.3

1. You are going to pick 1 card from a deck of regular playing cards. Find the probability of getting a 4 or a Black Card.

2. You are going to pick 1 card from a deck of regular playing cards. Find the probability of getting a Spade or Heart.

3. You are going to pick 2 cards from a deck of regular playing cards and you do not replace the card after the first pick. Find the probability of getting a 3 on the first pick and a Club on the second pick.

4. You are going to pick 2 cards from a deck of regular playing cards and you do not replace the card after the first pick. Find the probability of getting an ace on the first pick and a queen on the second pick.

5. A Game is to be played where there is a box with one $100 bill, four $20 bills, six $5.00 bills and nine Blank Bills. You reach into the box and pick a bill. What is the probability of getting a $20 or $5?

6. Assume there are 3 jars with different color balls in them. Jar 1 has 4 red and 3 blue, Jar 2 has 2 red and 5 blue and Jar 3 has 1 red and 3 blue. If you close our eyes and pick a ball at random find the probability of picking a red ball.
Use the following Table for Mail Delivery

<table>
<thead>
<tr>
<th>Delivered to</th>
<th>First Class</th>
<th>Ads</th>
<th>Magazine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>325</td>
<td>406</td>
<td>203</td>
</tr>
<tr>
<td>Business</td>
<td>732</td>
<td>1021</td>
<td>97</td>
</tr>
</tbody>
</table>

7. Find the probability that the mailed item was an Ad or it went to a business.

8. Find the probability that the mailed item went to a home.

9. Find the probability that the mailed item was a magazine given that it went to a business.

10. At a local clinic there are 5 men, 8 women and 2 children. If 2 patients are selected at random find the probability that at least one of the patients is a man.

**Discrete Random Variables Sections 5.1 - 5.2**

Assume there is a 3 person family and you are looking at the gender of the children. Let the random variable X stand for number of males in the 3 children in the sample.

11. List the Discrete Random Variable Distribution in table format for this situation. Find the mean, variance and standard deviation for this distribution.

12. A raffle is to be held on a TV that is valued at $2000. A ticket costs $5.00 and 1000 tickets are sold. Find the expected value, E(X) for this situation.

**Binomial Distribution, Section 5.3**

13. A person randomly guesses on a 6 problem True or False test. Find the probability of getting exactly 3 questions correct. Use Statcrunch to solve this and paste in your graph and solution.

14. Using the previous problem find the probability of getting less than 3 questions correct. Use Statcrunch to solve this and paste in your graph and solution.
15. A person takes a 7 problem test where the probability of getting a single question correct is 0.3. Find the probability of getting 4 or more questions correct. Use Statcrunch to solve this and paste in your graph and solution.