Unit 11 Day 10 HW on Probability Review

Name: LEY

1) Mr. Frees goes out for pizza. He can choose from the following: small, medium, large, x-large; thin or thick crust; and pepperoni, sausage, veggie.

a) How many different combinations can he choose from?

$$4.2.3 = 24$$

b) Dang! The person right in front of him (Mr. McNiff) just took the last veggie pizza. How many combinations does he have to choose from now?

2) How many four letter "words" can you make from 9 different letters(using each only once)?

3) Over the years, you have collected eight beautifully framed photos of your dog. You **need** to hang four of them in four spots above your bed. How many ways can you do this?

4) You have a bag of marbles that contains 5 pink, 3 blue, and 10 yellow marbles. 18

a) What is the probability that you choose a pink or a blue marble? 6 + 3

Sink of a blue marble?
$$6 + 3 \qquad \frac{8}{18} = \boxed{4}$$

b) What is the probability that you choose a pink, blue, or a yellow marble?

c) What is the probability that you choose a pink AND THEN a yellow marble? (Without replacement)

$$\frac{5}{18} \cdot \frac{10}{17} = \frac{50}{306} = \frac{25}{153}$$

d) What is the probability that you choose a pink AND THEN a yellow AND THEN a blue marble?

(Without replacement)

$$\frac{5}{18} \cdot \frac{10}{17} \cdot \frac{3}{16} = \frac{150}{4896} = \frac{26}{816}$$

e) What is the probability that you choose a blue AND THEN a yellow marble? (With replacement)

$$\frac{3}{18} \cdot \frac{10}{18} = \frac{30}{324} = \frac{5}{54}$$

5) You roll a die. Here are the results:

# on Dice	Frequency
1	12
2	14
3	15
4	13
5	11
6	12
Total:	77

a) What is the theoretical probability that you roll a 6?



b) What is the experimental probability that you roll a 6?



c) What is the theoretical probability that you roll an odd number?



d) What are the actual results of when you rolled an odd number?

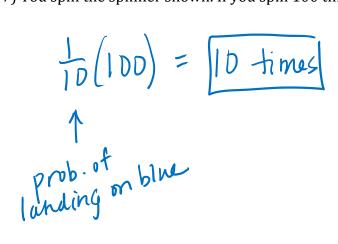


e) If you were to roll a die 77 times, how many times would you expect to roll a three?

f) How many times did you actually roll a 3 in your experiment?

6) A lock has four dials. On each dial are the digits 0-9. How many possible combinations are there?

7) You spin the spinner shown. If you spin 100 times, how many times would you expect to land on blue?





8) How many ways can 8 cars be parked in 5 parking spots?

9) A single die is rolled. What is the probability that the number is greater than 3 or even? **OVERIAP**

$$\frac{3}{6}$$
 + $\frac{3}{6}$ - $\frac{2}{6}$ = $\frac{3}{3}$ greater than greater than $\frac{3}{3}$ and even $\frac{3}{4}$ and ev

card?

$$\frac{4}{62} + \frac{26}{52} - \frac{2}{52} = \frac{28}{52} = \frac{7}{13}$$
Rufas

11) A card is randomly selected from a standard deck of cards. What is the probability that the card selected is a Queen or a Heart?

$$\frac{4}{52} + \frac{13}{52} - \frac{1}{52} = \frac{16}{52} = \frac{4}{13}$$

12) A card is randomly selected from a standard deck of cards. What is the probability that the card selected is a Queen and a Heart?

$$Q of$$
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13) Four cards are selected from a standard deck. What is the probability that there are no hearts sele

cards are selected from a standard deck. What is the probability that there are no hearts selected?

$$\frac{39}{52} \cdot \frac{38}{51} \cdot \frac{37}{50} \cdot \frac{36}{49} = \frac{1974024}{6497400} = 82251$$

Theorem is the probability that there are no hearts selected?

The selected from a standard deck. What is the probability that there are no hearts selected?

The selected from a standard deck. What is the probability that there are no hearts selected?

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14) Two cards are selected from a standard deck. What is the probability that the first is a heart and the second is a spade, without replacement?

$$\frac{13}{52} \cdot \frac{13}{51} = \frac{169}{2652} = \frac{13}{204}$$