Math 1030 February 6, 2019 Homework 4

1. If a 6-sided die is rolled, find these probabilities:

a. rolling a 6

b. rolling a number greater than 3

c. rolling a 1 or a 4

d. rolling an odd number

2. If two dice are rolled, find the probability of these results:

a. rolling a sum of 7

b. rolling a sum of 11

c. rolling a sum of 14

d. rolling doubles

e. not rolling doubles

f. rolling an odd sum

3. A card is drawn from a standard 52-card deck. Find these probabilities:

a. drawing a 7

b. drawing a club

c. drawing the queen of diamonds

d. drawing a 4 or a king

e. drawing a heart or a face card

f. drawing a red card

4. If one of the fifty US states is picked at random, what is the probability that it begins with letter I?

5. List the prime numbers greater than 1 and less than 100

6. What is the probability that a number between 1 and 100 (greater than 1 and less than 100) is prime?

7. What is the probability that a prime number greater than 1 and less than 100 is less than 50?

A family has 3 children. Asume that the probability of having either a boy or a girl is identical.

8. Draw a tree diagram showing the possible sequences of gender having 3 children.

9. What is the probability for each:

a. all are boys

b. 1 boy and 2 girls, any order

c. 2 boys and 1 girls, any order

d. At least 1 girl, any order

10. A fish tank contains 12 bass, 25 catfish, and 52 muskie. Assume that each fish is equally likely to byte. A fisherman catches 1 fish.

a. What is the probability of the catch being a muskie or a bass?

b. What is the probability of the catch not being a muskie?

11. A restaurant menu has 25 deep fried entrees, 7 boiled entrees, 15 fried entrees, and 8 grilled entrees. A customer orders an entree at random.

a. What is the probability that the entree is boiled?

b. What is the probability that the entree is not fried nor deep fried?

12. The probability that a fair attendee rides a Ferris wheel is 0.27, and the probability that a fair attendee watches a horse race is 0.31 . If the probability that a fair attendee rides a Ferris wheel or watches a horse race is 0.38, what is the probability that a fair attendee watches a horse race and rides a Ferris wheel?

HINT: P(A or B) = P(A) + P(B) - P(A and B)

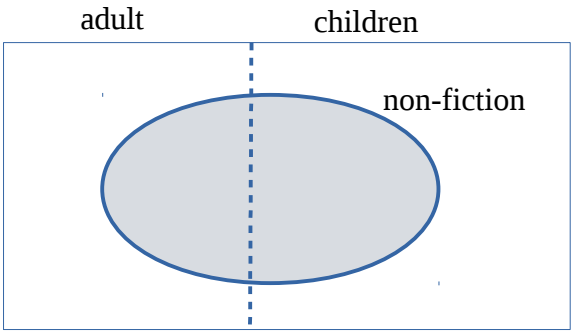
13. What is the probability of drawing a club or a face card ?

14. At a used-book sale, 100 books are for adults, and 160 are for children. Of the adult books, 70 are non-fiction while 60 of the children's books are non-fiction. If a book is selected at random, thind the probability that it is:

a. fiction

b. not a children's non-fiction book

c. an adult book or a children's non-fiction book



HINT: Fill in numbers for this diagram at right:

15. An urn contains 13 black balls, 15 green balls, 12 red balls, and 22 white balls.

a) P(red)=

b) P(green or red) =

c) P(not a green ball) =

16. A card is drawn from a standard 52-card deck.

a) P(odd number card) =

b) P(odd number card or club) =

c) P(red or a face card) =

17. A roulette whele has numbers 1-36, 0, and 00 on the rim for 38 outcomes which are equally likely.

a) P(odd) =

b) P(5) =

18. Draw a Venn diagram showing the probability experiment for rolling a die where event A is rolling an odd number and event B is rolling a prime number.

19. There are 200 people in a restaurant. Of these, 120 like the Vikings, 102 like the Packers, and 24 don't like either.

a) How many people like the Vikings or Packers?

b) How many people like the Vikings and Packers?

HINT: P(A or B) = P(A) + P(B) - P(A and B)