Math 1040 Worksheet 5 – Chapter 5 **Name**_____
Trygstad

Solutions are included at the end of the worksheet. This worksheet is optional and will not be turned in, but may be helpful in reviewing material and studying for exams.

1) A person can order a new car with a choice of 9 possible colors, with or without air conditioning, with or without heated seats, with or without anti–lock brakes, with or without power windows, and with or without a CD player. In how many different ways can a new car be ordered in terms of these options?

2) Find P(A and B) given that P(A) = 0.2, P(B) = 0.1, and A and B are independent.

3) In how many ways can Iris choose 4 of 9 books to bring on vacation?

4) In the game of craps two dice are rolled and the up faces are totaled. If the person rolling the dice on the first roll rolls a 7 or an 11 total they win. If they roll a 2, 3, or 12 on the first roll they lose. If they roll any other total then on subsequent rolls they must roll that total before rolling a 7 to win. What is the probability of winning on the first roll?

A) 0.17 B) 0.22 C) 0.50 D) 0.06

5) 390 voters are classified by income and political party. The results are shown in the table. If a person is selected at random from the sample, find the probability that the person has medium income or votes Democrat.

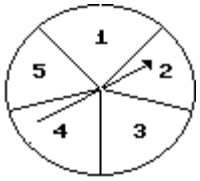
	Democrat	Republican	Total
Low Income	110	75	185
Medium Income	87	72	159
High Income	20	14	34
Super High Income	8	4	12
Total	225	165	390

6) Professor Alle Whet teaches French and has a class of 24 students. Part of his grading system includes ar observation of groups of 3 students engaged in a conversation in French. This is an example of a problem that can be solved using which method?

A) Permutations B) Conditional probability
C) Randomness D) Combinations

7) From 8 names on a ballot, a committee of 5 will be elected to attend a political national convention. How many different committees are possible?

8) Use the spinner below to answer the question. Assume that it is equally probable that the pointer will land on any one of the five numbered spaces. If the pointer lands on a borderline, spin again.



Find the probability that the arrow will land on 1 or 2.

9) Which of the following cannot be the probability of an event?

A) 0 B) $\frac{\sqrt{3}}{3}$ C) 0.001 D) –2

10) Find P(A or B) given that P(A) = 0.7, P(B) = 0.2, and A and B are mutually exclusive.

11) A single die is rolled twice. Find the probability of getting a 2 the first time and a 4 the second time.

12) A human gene carries a certain disease from the mother to the child with a probability rate of 35%. That is, there is a 35% chance that the child becomes infected with the disease. Suppose a female carrier of the gene has five children. Assume that the infections of the five children are independent of one another. Find the probability that at least one of the children get the disease from their mother.

13) The table below represents a random sample of the number of deaths per 100 cases for a certain illness over time. If a person infected with this illness is randomly selected from all infected people, find the probability that the person lives 3–4 years after diagnosis. Express your answer as a simplified fraction and as a decimal.

Years after Diagnosis	Number deaths
1–2	15
3–4	35
5–6	16
7–8	9
9–10	6
11–12	4
13–14	2
15+	13

14) A church has 8 bells in its bell tower. Before each church service 5 bells are rung in sequence. No bell is rung more than once. How many sequences are there?

1) 288
2) 0.02
3) 126
4) B
5) 0.762
6) D
7) 56
8) $\frac{2}{5}$
9) D
10) 0.9
11) $\frac{1}{36}$
12) 0.884
13) $\frac{35}{100}$; 0.35
14) 6720