Name_____ Course Number:_____ Section Number:_____

Directions: Circle the correct choice for each response set. If required, show calculations in the blank spaces near the problems.

Find the indicated probability.

1) A die with 8 sides is rolled. What is the probability of rolling a number less than 7?

    A) $\frac{7}{8}$ B) 6   C) $\frac{3}{4}$ D) $\frac{1}{8}$

2) If a person is randomly selected, find the probability that his or her birthday is in May. Ignore leap years.

    A) $\frac{1}{365}$ B) $\frac{1}{12}$ C) $\frac{1}{31}$ D) $\frac{31}{365}$

3) Fly Best Airlines boasts that this year among 316 flights from Los Angeles to New York City 310 arrived on time. What is the probability that the next flight on Fly Best from Los Angeles to New York City will be on time?

    A) 0.891   B) 0.971   C) 0.918   D) 0.981

Answer the question, considering an event to be "unusual" if its probability is less than or equal to 0.05.

4) Assume that a study of 300 randomly selected school bus routes showed that 274 arrived on time. Is it "unusual" for a school bus to arrive late?

    A) Yes   B) No

Answer the question.

5) Suppose you are playing a game of chance. If you bet $4 on a certain event, you will collect $172 (including your $4 bet) if you win. Find the odds used for determining the payoff.

    A) 42 : 1   B) 43 : 1   C) 172 : 176   D) 1 : 42

Find the indicated complement.

6) The probability that Luis will pass his statistics test is 0.59. Find the probability that he will fail his statistics test.

    A) 1.69   B) 1.44   C) 0.41   D) 0.30

Find the indicated probability.

7) Of the 45 people who answered "yes" to a question, 13 were male. Of the 83 people that answered "no" to the question, 7 were male. If one person is selected at random from the group, what is the probability that the person answered "yes" or was male?

    A) 0.156   B) 0.406   C) 0.289   D) 0.508

8) A bag contains 6 red marbles, 3 blue marbles, and 1 green marble. Find P(not blue).

A) $\dfrac{10}{7}$ 　　　　 B) $\dfrac{7}{10}$ 　　　　 C) $\dfrac{3}{10}$ 　　　　 D) 7

9) In one town, 67% of adults have health insurance. What is the probability that 5 adults selected at random from the town all have health insurance? Round to the nearest thousandth if necessary.

A) 0.135 　　　　 B) 0.075 　　　　 C) 0.67 　　　　 D) 3.35

10) A IRS auditor randomly selects 3 tax returns from 59 returns of which 11 contain errors. What is the probability that she selects none of those containing errors? Round to four decimal places.

A) 0.5385 　　　　 B) 0.0065 　　　　 C) 0.0051 　　　　 D) 0.532

Provide a written description of the complement of the given event.

11) When several textbooks are edited, none of them are found to be free of errors.

A) One of the textbooks is free of errors.

B) At most one of the textbooks is free of errors.

C) All of the textbooks are free of errors.

D) At least one of the textbooks is free of errors.

Find the indicated probability. Round to the nearest thousandth.

12) In a batch of 8,000 clock radios 9% are defective. A sample of 8 clock radios is randomly selected without replacement from the 8,000 and tested. The entire batch will be rejected if at least one of those tested is defective. What is the probability that the entire batch will be rejected?

A) 0.530 　　　　 B) 0.0900 　　　　 C) 0.470 　　　　 D) 0.125

Find the indicated probability. Express your answer as a simplified fraction unless otherwise noted.

13) The table below describes the smoking habits of a group of asthma sufferers.

	Nonsmoker	Light smoker	Heavy smoker	Total
Men	386	73	79	538
Women	352	83	90	525
Total	738	156	169	1063

If one of the 1063 subjects is randomly selected, find the probability that the person chosen is a nonsmoker given that it is a woman. Round to the nearest thousandth.

A) 0.331 　　　　 B) 0.670 　　　　 C) 0.394 　　　　 D) 0.477

14) The following table contains data from a study of two airlines which fly to Small Town, USA.

	Number of flights which were on time	Number of flights which were late
Podunk Airlines	33	6
Upstate Airlines	43	5

If one of the 87 flights is randomly selected, find the probability that the flight selected is an Upstate Airlines flight given that it was late.

A) $\dfrac{5}{48}$

B) $\dfrac{5}{11}$

C) $\dfrac{5}{87}$

D) None of the above is correct.

Solve the problem.

15) Swinging Sammy Skor's batting prowess was simulated to get an estimate of the probability that Sammy will get a hit. Let 1 = HIT and 2 = OUT. The output from the simulation was as follows.

1 2 2 2 1 2 2 2 2 2 1 1 2 2 2 2 2 1 1 1 2 2 2 2 2 1 1 2 2 1 2 1 2 2 2 2 2 2 1 1 1 2

Estimate the probability that he makes an out.

A) 0.782   B) 0.810   C) 0.667   D) 0.621

Evaluate the expression.

16) $8C_4$

A) 420   B) 24   C) 2   D) 70

Solve the problem.

17) How many ways can an IRS auditor select 6 of 11 tax returns for an audit?

A) 462   B) 332,640   C) 1,771,561   D) 720

18) The organizer of a television show must select 5 people to participate in the show. The participants will be selected from a list of 28 people who have written in to the show. If the participants are selected randomly, what is the probability that the 5 youngest people will be selected?

A) $\dfrac{1}{98,280}$ B) $\dfrac{2}{7}$ C) $\dfrac{1}{11,793,600}$ D) $\dfrac{1}{120}$

19) There are 8 members on a board of directors. If they must elect a chairperson, a secretary, and a treasurer, how many different slates of candidates are possible?

A) 56   B) 336   C) 512   D) 40,320

20) In a certain lottery, five different numbers between 1 and 35 inclusive are drawn. These are the winning numbers. To win the lottery, a person must select the correct 5 numbers in the same order in which they were drawn. What is the probability of winning?

A) $\dfrac{1}{38,955,840}$ 　　　 B) $\dfrac{1}{120}$ 　　　 C) $\dfrac{120}{38,955,840}$ 　　　 D) $\dfrac{1}{35!}$

1) C
2) D
3) D
4) B
5) A
6) C
7) B
8) B
9) A
10) D
11) D
12) A
13) B
14) B
15) C
16) D
17) A
18) A
19) B
20) A