

- 7) A basketball player hits three-point shots 41% of the time. If she takes 4 shots during a game, what is the probability that she hits all 4 shots? 7) _____
- A) 41% B) 10.3% C) 2.8% D) 82%

Assume that a researcher randomly selects 14 newborn babies and counts the number of girls selected, x . The probabilities corresponding to the 14 possible values of x are summarized in the given table. Answer the question using the table.

Probabilities of Girls

x(girls)	P(x)	x(girls)	P(x)	x(girls)	P(x)
0	0.000	5	0.122	10	0.061
1	0.001	6	0.183	11	0.022
2	0.006	7	0.209	12	0.006
3	0.022	8	0.183	13	0.001
4	0.061	9	0.122	14	0.000

- 8) Find the probability of selecting 9 or more girls. 8) _____
- A) 0.001 B) 0.212 C) 0.122 D) 0.061

Solve the problem.

- 9) How many ways can a committee of 3 be selected from a club with 12 members? 9) _____
- A) 6 ways B) 220 ways C) 1320 ways D) 110 ways
- 10) A single die is rolled one time. Find the probability of rolling an even number or a number less than 5. 10) _____
- A) $\frac{1}{2}$ B) $\frac{5}{6}$ C) $\frac{2}{3}$ D) 1
- 11) Suppose you pay \$3.00 to roll a fair die with the understanding that you will get back \$9 for rolling a 5 or a 1, nothing otherwise. What are your expected winnings? 11) _____
- A) \$3.00 B) \$0 C) \$9 D) -\$3.00
- 12) A die is rolled 20 times and the number of twos that come up is tallied. Find the probability of getting exactly five twos. 12) _____
- A) 0.921 B) 0.003 C) 0.083 D) 0.129
- 13) The prizes that can be won in a sweepstakes are listed below together with the chances of winning each one:
\$5800 (1 chance in 8600); \$1100 (1 chance in 5900); \$600 (1 chance in 4700); \$400 (1 chance in 2400).
Find the expected value of the amount won for one entry if the cost of entering is 64 cents. 13) _____
- A) \$400 B) \$0.31 C) \$0.99 D) \$0.52
- 14) In a certain town, 30% of voters favor a given ballot measure. For groups of 36 voters, find the variance for the number who favor the measure. 14) _____
- A) 57.15 B) 2.75 C) 7.56 D) 10.80
- 15) The probability that a person has immunity to a particular disease is 0.3. Find the mean number who have immunity in samples of size 23. 15) _____
- A) 11.5 B) 6.9 C) 0.3 D) 16.1

Find the indicated probability.

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

16) _____

	Nonsmoker	Light smoker	Heavy smoker	Total
Men	353	49	33	435
Women	441	35	34	510
Total	794	84	67	945

If two different people are randomly selected from the 945 subjects, find the probability that they are both women.

- A) 0.00003845 B) 0.2913 C) 0.2178 D) 0.2910

17) Find the probability of at least 2 girls in 9 births. Assume that male and female births are equally likely and that the births are independent events.

17) _____

- A) 0.910 B) 0.020 C) 0.980 D) 0.070

18) A sample of 100 wood and 100 graphite tennis rackets are taken from the warehouse. If 14 wood and 13 graphite are defective and one racket is randomly selected from the sample, find the probability that the racket is wood or defective.

18) _____

- A) 0.57
 B) 0.565
 C) 0.135
 D) There is insufficient information to answer the question.

19) A class consists of 10 women and 51 men. If a student is randomly selected, what is the probability that the student is a woman?

19) _____

- A) $\frac{1}{61}$ B) $\frac{10}{61}$ C) $\frac{10}{51}$ D) $\frac{51}{61}$

Answer the question.

20) Which of the following cannot be a probability?

20) _____

- A) 0 B) 1 C) -1 D) $\frac{1}{2}$

21) What is the probability that 18 tosses of a fair coin will show 11 tails?

21) _____

- A) 0.1214 B) 0.0607 C) 0.0243 D) 0.2428

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

22) When 10 adults are tested for high blood pressure, at least one of the results are positive.

22) _____

- A) All of the adults have high blood pressure.
 B) None of the adults have high blood pressure.
 C) Nine of the adults have high blood pressure.

Estimate the probability of the event.

23) Of 1745 people who came into a blood bank to give blood, 225 people had high blood pressure.

23) _____

Estimate the probability that the next person who comes in to give blood will not have high blood pressure.

- A) 0.048 B) 0.871 C) 0.097 D) 0.129

Two marbles are drawn without replacement from a box with 3 white, 2 green, 2 red, and 1 blue marble. Find the probability.

24) The second marble is blue given the first marble is white.

24) _____

A) $\frac{3}{8}$

B) $\frac{1}{8}$

C) $\frac{1}{7}$

D) $\frac{3}{7}$

SHOW WORK PROBLEMS. Show work neatly!

Determine whether the following is a probability distribution. If not, identify the requirement that is not satisfied

25)

25) _____

x	P(x)
0	0.249
1	0.094
2	0.131
3	0.209
4	0.172
5	0.203

Answer Key

Testname: SAMPLEEXAM2_2023

- 1) D
- 2) B
- 3) A
- 4) B
- 5) D
- 6) C
- 7) C
- 8) B
- 9) B
- 10) B
- 11) B
- 12) D
- 13) D
- 14) C
- 15) B
- 16) D
- 17) C
- 18) B
- 19) B
- 20) C
- 21) A
- 22) B
- 23) B
- 24) C
- 25) Not a probability distribution. The sum of the $P(x)$'s is not 1.