

Topic: Random Sampling 1

Practice

Question 1: Match the following

simple random

Members volunteer to be included in the sample.

systematic

Members that are readily available are selected.

self-selected

Each member has an equal chance of being selected.

convenience

Members are selected according to a specified interval.

Question 2: **MEMBERSHIP** A club member would like to ask the other members in her state's council about new requirements for first-year members. Classify each sampling method. She asks every other club member in her 25-member club.

A. Simple-random

C. Stratified

B. Systematic

D. Convenience

Question 3: **MEMBERSHIP** A club member would like to ask the other members in her state's council about new requirements for first-year members. Classify each sampling method. She asks every 5th member on the council roster.

A. Simple-random

C. Stratified

B. Systematic

D. Convenience



Topic: Random Sampling 2

Practice

Question 1:

survey

A researcher wants to determine whether young adults would be interested in a new line of smartwatches entering the market.

observational study

A teacher wants to determine whether bright colors affect the test-taking abilities of high school students.

experiment

A principal wants to determine the favorite after-school activity of his students.

Question 2: In a **survey**, data are collected from responses given by members of a group regarding their characteristics, behaviors, or opinions.

- A. True
- B. False

Question 3: In an **observational study**, members of a sample are measured or observed without being affected by the study.

- A. True
- B. False



Topic: Using Statistical Experiments 1

Practice

Question 1:

A student tossed a fair die 150 times and recorded the results. Find the theoretical and experimental probabilities of rolling a 5. Write your answer as a percentage rounded to the nearest tenth, if necessary.

The theoretical probability of rolling a 5 is

A. 11.9

C. 16

B. 12.5

D. 16.7

Number	Frequency
1	51
2	16
3	23
4	19
5	24
6	17

Question 2:

A student tossed a fair die 150 times and recorded the results. Find the theoretical and experimental probabilities of rolling a 5. Write your answer as a percentage rounded to the nearest tenth, if necessary.

The experimental probability of rolling a 5 is

A. 11.9

C. 16

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Number	Frequency
1	51
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6	17

Question 3:

experimental probability is calculated using data from an actual experiment.

A. True

B. False



Topic: Using Statistical Experiments 2

Practice

Question 1: A **probability model** is a mathematical representation of a random event. It consists of the sample space and the probability of each outcome.

- A. True
- B. False

Question 2: **HEALTH CLUBS** A health club ran a promotion in which they sold tickets to their customers, and 1 in every 10 tickets won free training sessions valued at \$150. Describe the probability model.

- A. Theoretical Probability of Winning = $\frac{9}{10}$
Theoretical Probability of Not Winning = $\frac{1}{10}$
- B. Theoretical Probability of Winning = $\frac{1}{8}$
Theoretical Probability of Not Winning = $\frac{7}{8}$
- C. Theoretical Probability of Winning = $\frac{7}{8}$
Theoretical Probability of Not Winning = $\frac{1}{8}$
- D. Theoretical Probability of Winning = $\frac{1}{10}$
Theoretical Probability of Not Winning = $\frac{9}{10}$

Question 3: **PROMOTIONS** A company that produces bottles of water runs a promotion in which 1 out of every 8 bottle caps wins the customer a free bottle of water. Describe the probability model.

- A. Theoretical Probability of Winning = $\frac{9}{10}$
Theoretical Probability of Not Winning = $\frac{1}{10}$
- B. Theoretical Probability of Winning = $\frac{1}{8}$
Theoretical Probability of Not Winning = $\frac{7}{8}$
- C. Theoretical Probability of Winning = $\frac{7}{8}$
Theoretical Probability of Not Winning = $\frac{1}{8}$
- D. Theoretical Probability of Winning = $\frac{1}{10}$
Theoretical Probability of Not Winning = $\frac{9}{10}$

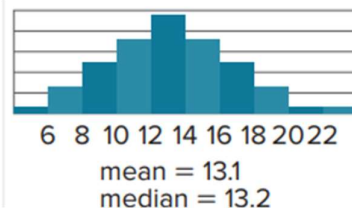


Topic: Analysing Population Data

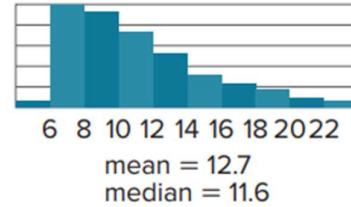
Practice

Question 1: *Which is Negatively Skewed Distribution*

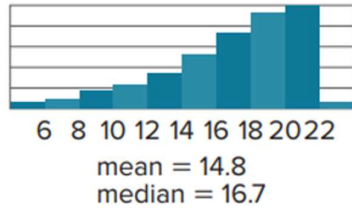
A.



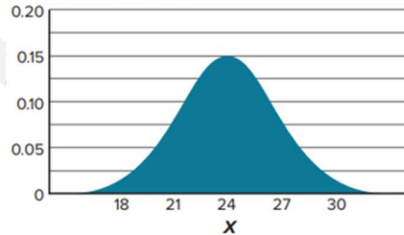
C.



B.



D.



Question 2:

TRACK A coach recorded the times of each track member for a 400-meter race. Find the mean, μ .

A. 55.1

C. 52.4

B. 59.3

D. 48.9

400m Race Times (seconds)	
57.1	55.9
59.3	54.9
54.6	50.3
55.2	53.5

Question 3: Use a graphing calculator to find the standard deviation of the set of data.
26, 12, 15, 20, 17, 19, 18, 16, 14, 23, 13, 18, 19, 20, 22

A. 6.2

C. 3.7

B. 12.4

D. 18.1

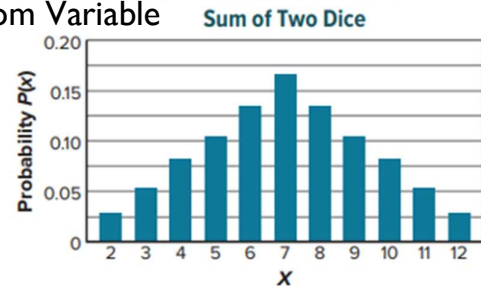


Topic: Normal Distributions 1

Practice

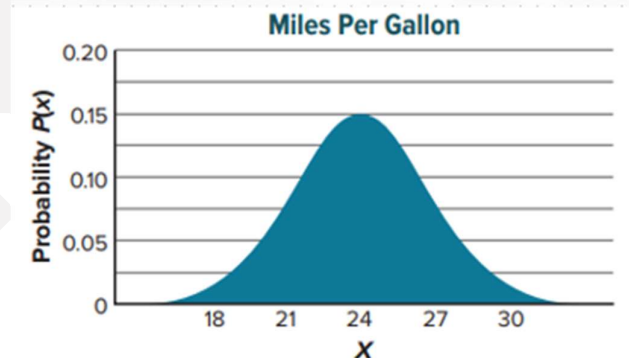
Question 1: This is an example of Discrete Random Variable

- A. True
- B. False



Question 2: Which type of graph is this

- A. Discrete Random Variable
- B. Continuous Random Variable
- C. Variable Graph
- D. Random Graph



Question 3: Classify each random variable individual archery scores

- A. Continuous
- B. Discrete

Question 3: Classify each random variable 200-meter swim times

- A. Continuous
- B. Discrete



Topic: Normal Distributions 2

Practice

Question 1: Find z if $X = 106.3$, $\mu = 88.8$, and $\sigma = 9.6$. Round your answer to the nearest thousandth.

- | | |
|------------------|-----------------|
| A. 0.5753 | C. 1.316 |
| B. 1.258 | D. 1.823 |

Question 2: Use a table to find the area under the normal curve within $z < 0.19$. Round your answer to the nearest ten thousandth. The area is

- | | |
|------------------|-----------------|
| A. 0.5753 | C. 1.316 |
| B. 1.258 | D. 1.823 |

Question 3: **CUSTOMER SERVICE** The length of time that a customer spends waiting to be connected to a customer service representative is normally distributed with a mean of 21.3 seconds and a standard deviation of 3.8 seconds. Find the probability that a wait time will be greater than 30 seconds.

- A. **0.7%**
B. **1.1%**
C. **1.8%**
D. **2.5%**

