Name: _____

SM3 Unit 14 Review

Mckenzie wants to know what proportion of students at OHS know the members of the girls soccer team. She randomly selects 6 classrooms and contacts the teachers that work in those rooms, requesting permission to distribute a small set of questions at the start of their 3rd period class. They agree, and she collects her data from every person in each of the 6 classrooms.

1. What is the population of the study?

A	Girls Soccer Team	B	Proportion of students that know members of the girls soccer team	C	Students at OHS	D	Students that are in the 3rd period classes that took surveys

2. What is the parameter of interest of the study?

A	Girls Soccer Team	B	Proportion of students that know members of the girls soccer team	C	Students at OHS	D	Students that are in the 3rd period classes that took surveys

3. What is the sample of the study?

A	Girls Soccer Team	B	Proportion of students that know members of the girls soccer team	C	Students at OHS	D	Students that are in the 3rd period classes that took surveys

4. Which sample method did Mckenzie implement for her study?

A	Cluster	B	Simple Random	C	Stratified	D	Convenience

5. Classify McKenzie's technique for acquiring data.

A	Survey	B	Observation	C	Experiment	D	Inference

Identify which of the six sampling methods (simple random, systematic, stratified, cluster, convenience or voluntary) were used in each of the following examples and then tell whether the method is biased or unbiased.

6. You are in charge of deciding which super hero will be featured in the next Marvel movie. You'd like to know which super hero that hasn't had a movie would be the most popular choice. You convince a local comic book store to sell you the address of every customer they've had within the last 5 years. You plot the addresses and decide to split the region into 6 reasonably equal districts, then you roll a die and contact each person in the district and ask them who their favorite Marvel heroes are.

Method: Biased | Unbiased

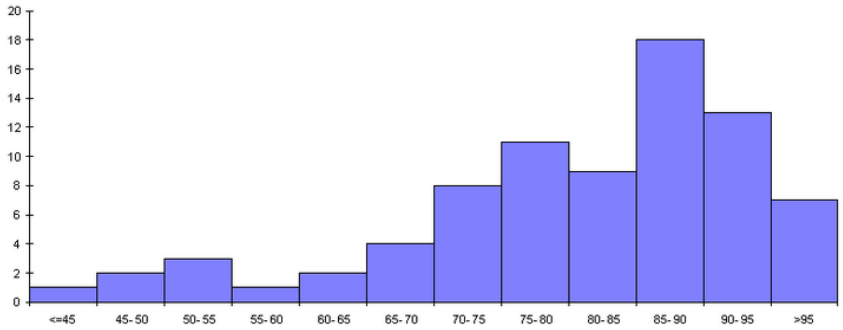
7. You are in charge of school dances. You want to know what kind of music students would like to have played at the next dance. Each student in the school has a student ID number. You randomly select 20 numbers between the lowest and highest student ID number and then contact that information with a survey.

Method: Biased | Unbiased

8. You are in charge of the next faculty talent show. You want to know which teachers the students are interested in seeing perform a talent. So you send out a mass text to every student in the school asking them to respond to your survey.

Method: Biased | Unbiased

Use the figure below for question 9:



9. Which description of the above histogram is most accurate?

A Normally distributed B Left skewed C Right skewed D None of the above

10. What percent of data that is normally distributed is within 2 standard deviations?

11. This year, Kim's math test scores are normally distributed and had a mean $\mu = 82$ and a standard deviation $\sigma = 3.1$. Kim wants to study hard and score at least 94% on her next math test. What is the probability that she succeeds?

Josh gets an average of 140 up-votes on Reddit per month with a standard deviation of 12 up-votes. In March, he got 170 up-votes.

12. Find the z-score representing Josh's up-votes during March.

13. Assuming his monthly up-votes are Normal, what percent of the time does he get more than 160 up-votes?

14. Lucy randomly selects a hair style each day. In the last 80 days, Lucy has selected pony-tail as her hair style 13 times.
    a. What is the sample proportion of Lucy selecting to wear her hair in a pony-tail?

    b. What is the margin of error for a 95% confidence level?

    c. What is the 95% confidence interval for the population proportion?

    d. Interpret the meaning of the interval in terms of the context of the problem.

15. When asked how many lessons math students would prefer to have in each unit before a test, they replied with the following sample:

8	**7**	**0**	**9**	**4**
1	**1**	**2**	**6**	**1**
1	**5**	**0**	**5**	**5**
4	**7**	**5**	**1**	**3**
9	**3**	**8**	**8**	**2**

a. Find the mean and standard deviation for the sample. (Round to the nearest tenth)

b. Find the margin of error for a 95% confidence level and round to the nearest tenth.

c. Find the 95% confidence interval.

d. Interpret the meaning of the interval in terms of the context of the problem.