

UNDERSTANDING DIFFERENT SAMPLING METHODS
ASSESSMENT INSTRUMENT

This assessment instrument is designed to address the following learning goals: Students will be able to (a) understand five types of sampling methods, (b) determine appropriate sampling methods and their strengths and weaknesses; and (c) gain confidence in using quantitative reasoning to explain sampling methods.

Assessment Instrument

York College has been given a sizeable grant to build either a new library or gymnasium. But there is only enough money to build one facility. The York College President wants to ask students which one they believe is in greater need of renovation.

Task: Use the following Table to review data on the demographics of York College Students.

	Freshman		Sophomore		Junior		Senior		Total	
	#	%	#	%	#	%	#	%	#	%
Male	720	40	627	33	630	30	575	25	2552	31.5
Female	1080	60	1273	67	1470	70	1725	75	5548	68.5
Total	1800	100	1900	100	2100	100	2300	100	8100	100

After you study this table, please answer the following questions:

1. a) If you sample 50% of the students, how many students would this include?

b) What problem might occur if a simple random sample is taken?

2. How would you determine which students to sample in a systematic random sample the size of 50?

3. You decide to sample 1,000 students but you want to keep the same proportion of males to females in the population.
 - a) How many males and females should be sampled?

 - b) What kind of sampling method is used here?

4. You decide to sample 10% of the students but want to be assured that each class will be represented in the sample.
- a) How many students from each class should be sampled? Put your answers in a table.

 - b) What kind of sampling method is used here?
5. You decide to sample only students in PSY 330 classes.
- a) What kind of sampling method is used here?

 - b) Do you think this sample is likely to be representative of York College student views concerning renovation choice? Explain why or why not?
6. What sampling method would you choose as the best way to determine York College student views concerning renovation choice? Explain your answer.
7. How confident do you feel about your use of quantitative reasoning to explain sampling methods? Indicate your selection below and explain your answer.
- Very Confident _____ Somewhat Confident _____ Not Confident _____

Scoring Rubric

Question #1

Rubric for grading question #1

(a) Did the student correctly identify the correct number of students?

No.	Yes.
0 points.	1 point.

(b) Did the student correctly determine what problem might occur if a simple random sample is taken?

No, the student determined that no problem might occur if a simple random sample is taken.	Yes, the student correctly determined that a problem might occur if a random sample is taken such as the sample may not be representative of York College student opinions, or there may be problems reaching the target population depending on the method used to contact students, etc.
0 points.	1 point.

Question # 2

Rubric for grading question #2

Did the student correctly determine which students to sample in a systematic random sample the size of 50?

No, the student incorrectly determined which students to sample in a systematic random sample the size of 50.	Yes, the student correctly determined how to systematically select a random sample of 50 students (i.e., every 162 nd student).
0 points.	1 point.

Question #3

Rubric for grading question #3

a) Did the student correctly determine how many males and females should be included in a sample of 1,000 students?

No, the student did not determine how many males and females should be sampled in a sample of 1,000 students.	Yes, the student correctly determined how many males (i.e., 315) and females (i.e., 684) should be included in a sample of 1,000
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	students.
0 points.	1 point.

b) Did the student correctly identify the kind of sampling method used here?

No, the student did not correctly identify the sampling method used here.	Yes, the student correctly identified stratified sampling as the method of sampling used here.
0 points.	1 point.

Question #4

Rubric for grading question #4

a) Did the student correctly identify how many students from each class should be sampled if 10% of the students are sampled?

No, the student did not correctly determine how many students from each class should be sampled.	Yes, the student correctly determined how many students from each class should be sampled, but s/he did not put the answers in a table.	Yes, the student correctly determined how many students from each class should be sampled (i.e., 180 freshmen, 190 sophomores, 210 juniors, 230 seniors), and s/he put the answers in a table.
0 points.	1 point.	2 points.

b) Did the student correctly identify the kind of sampling method used here?

No, the student did not identify the sampling method used here.	Yes, the student correctly identified cluster sampling as the method of sampling used here.
0 points.	1 point.

Question #5

Rubric for grading question #5

a) Did the student correctly identify the kind of sampling method used here?

No, the student did not identify the sampling method used here.	Yes, the student correctly identified convenience sampling as the method of sampling used here.
0 points.	1 point.

b) Did the student correctly explain whether or not the sample is likely to be representative of York College student views concerning renovation choice?

No, the student did not correctly explain why this sampling method would not be likely to be representative of York college student views.	Yes, the student correctly explained that the sampling method would not be likely to be representative of York College student views, but a clear and logical explanation was not provided.	Yes, the student correctly explained in a clear and logical manner that the sampling method would not be likely to be representative of York College student views.
0 points.	1 point.	2 points.

Question #6

Rubric for grading question #6

Did the student correctly identify and explain which sampling method s/he would choose as the best way to determine York College student views concerning renovation choice?

No, the student did not identify a particular method as the best method to determine York College student views concerning renovation choice.	Yes, the student correctly identified a particular method as the best method to determine York College student views concerning renovation choice, but there were some minor mistakes (or a mistake) that detracted from understanding (e.g., grammatical errors), etc.)	Yes, the student identified a particular method as the best method to determine York College student views and explained the method of choice without any grammatical errors or other types of mistakes.
0 points.	1 point.	2 points.

Scoring Rubric scoring range = 0-13