

MAT 110 IN - Lab 4 - Due: Fri, Apr 3 (by 11:59 pm)

Reviewing Module 3 Material

Student Name: _____

Group Member's Names (if applicable):

1. _____

2. _____

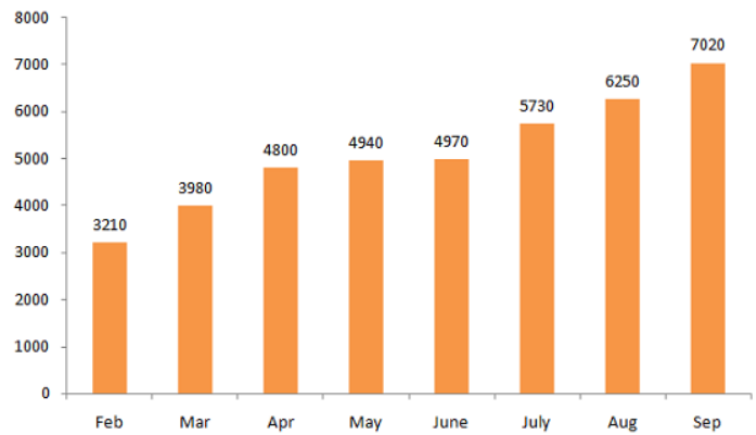
Objectives:

1. Answer questions pertaining to bar graphs, broken-line graphs, and circle graphs
2. Find the mean, median, and mode for a data set
3. Find the range, and standard deviation for a data set
4. Use the 68-95-99.7 rule to calculate percentages of values

Part 1: Bar Graphs (5 points each)

The bar graph (and table) below shows the number of students at a local university who are taking a year-long class and have signed up for tutoring. Review the information and answer the questions that follow.

Month	Frequency
February	3210
March	3980
April	4800
May	4940
June	4970
July	5730
August	6250
September	7020

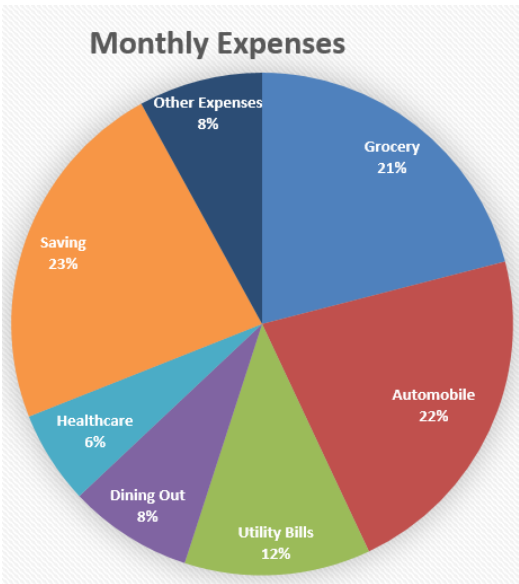


1. Which month has the fewest students signed up for tutoring? _____
2. Which month has the most students signed up for tutoring? _____
3. What is the percent increase from February to March? **Show how you arrived at your answer, round to 2 decimal places, and include the correct units with your answer.**

4. What is the percent increase from February to September? **Show how you arrived at your answer, round to 2 decimal places, and include the correct units with your answer.**

Part 2: Circle Graphs (5 points each)

The pie chart (circle graph) and table below represents the monthly budget for Johnny Applewood.



Budget Areas	Percent
Grocery	21%
Automobile	22%
Utility Bills	12%
Dining Out	8%
Healthcare	6%
Saving	23%
Other Expenses	8%

5. Which category represents the most of his budget? _____
6. Which category represents the least of his budget? _____
7. If Johnny spent \$300 on Utility Bills what amount did he spend on Healthcare? _____
Show how you arrived at your answer and include the correct units with your answer.
8. If Johnny spent \$525 on Groceries what amount did he spend on Saving? _____
Show how you arrived at your answer and include the correct units with your answer.
9. If Johnny spent \$200 on Dining Out what amount did he spend on Automobile? _____
Show how you arrived at your answer and include the correct units with your answer.

Part 3: Measures of Center and Spread (5 points each)

The data below represents the number of hours (in each week of February) your friend worked at a part-time job.

- Week 1: 26 hours
- Week 2: 38 hours
- Week 3: 18 hours
- Week 4: 18 hours

Calculate each of the following. Show all of your calculations and include the correct units with each answer.

10. Mean number of hours worked = _____

11. Median number of hours worked = _____

12. Mode number of hours worked = _____

13. Range of the number of hours worked = _____

14. Standard Deviation for the number of hours worked = _____

Complete the table and show your work when using the standard deviation formula. Round your final answer to 2 decimal places.

Data Item	Data Item – Mean	(Data Item – Mean) ²
Total		

Part 4: Normal Distribution or the 68-95-99.7 Rule (5 points each)

You have been researching IQ's for one of your classes. You have learned that someone's IQ is a number meant to measure the cognitive abilities (intelligence) of people in relation to their age group. You have also been told that IQ's are roughly normal (the graph is symmetric and bell-shaped) with a mean of 100 and a standard deviation of 15.

Use the 68-95-99.7 Rule to answer the following questions. Show all of your calculations and include the correct units (percent or people) with each answer.

15. Use the 68-95-99.7 Rule to find the **percentage of people** with an IQ above 100. _____

16. For a group of 250 people, **calculate the number of people expected** to have an IQ above 100. _____

17. Use the 68-95-99.7 Rule to find the **percentage of people** with an IQ between 85 and 115. _____

18. For a group of 250 people, **calculate the number of people expected** to have an IQ between 85 and 115. _____

19. Use the 68-95-99.7 Rule to find the **percentage of people** with an IQ between 55 and 145. _____

20. For a group of 250 people, **calculate the number of people expected** to have an IQ between 55 and 145.
Do not round this answer. _____