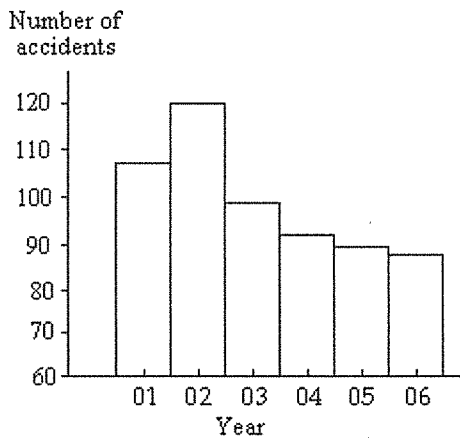


You may get help at the MATH Lab to complete this quiz.

**Provide an appropriate response.**

- 1) The graph below shows the number of car accidents occurring in one city in each of the years 2001 through 2006. The number of accidents dropped in 2003 after a new speed limit was imposed. Does the graph distort the data? Show how you would redesign the graph to be less misleading?



Is this graph a histogram of a bar graph? Does it make sense to ask the average year that an accident occurred? Explain.

**Find the mean, median, mode, and midrange for each of the two samples, then compare the two sets of results. Also, Find the range, variance, and standard deviation for each of the two samples, then compare the two sets of results.**

- 2) The Body Mass Index (BMI) is measured for a random sample of men and women. Interpret the results by determining whether there is a difference between the two data sets that is apparent from a comparison of the measures of center and spread. If there is, what is it?

b) Construct side-by-side boxplots for the given data.

Women	24	23.5	25	27	29	22.5	28	24
Men	18	20	24	25	20	21	22	20

a) Find

Women

Men

Mean	_____	_____
Mode	_____	_____
Midrange	_____	_____
Range	_____	_____
Variance	_____	_____
Standard deviation	_____	_____
Minimum	_____	_____
Q1	_____	_____
Median	_____	_____
Q3	_____	_____
Maximum	_____	_____

c) Compare the two sets of results using the measures of center and variation listed above.

d) Are any of the data values significant? (Significantly low values are less than  $\bar{x} - 2s$ , and significantly high values are greater than  $\bar{x} + 2s$ .)

Use Z-Scores to determine which score corresponds to the higher relative position.

3) (5 Points) Which student's score has the highest relative position:

a score of 44.2 on a math test for which  $\bar{x} = 40$  and  $s = 6$ , or

a score of 3.1 on a biology test for which  $\bar{x} = 2.1$  and  $s = 0.7$ .

Draw two standard normal distributions and label two axes, a z-axis and an x-axis with the test scores.

Solve the problem.

4) (10 Points) The mean number of M&M's in a bag is 42 and the standard deviation is 3. Use the range rule of thumb to estimate the minimum and maximum "usual" numbers of M&M's in a bag.

Is the number of M&M's in a bag discrete or continuous? \_\_\_\_\_

If we get a bag with 44 M&M's what is the Z-score of this value? \_\_\_\_\_

Significantly low are  $\leq$  \_\_\_\_\_ Significantly high values are  $\geq$  \_\_\_\_\_

Is an 44 significant? \_\_\_\_\_ Why?

Draw a normal distribution showing the above information. Label two axes, the z-axis and an x-axis with the z-scores and the test scores.