

MATH 103 - Test #3 - 4/28/00

Show all work for maximum credit. You may use the following formulas as needed.

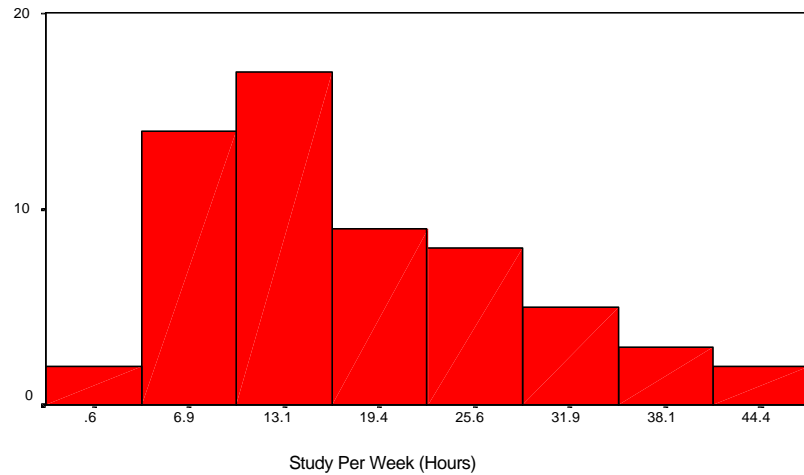
$$z = \frac{X - \mu}{s}$$

$$m = z / 2\%$$

$$n = (z / 2m)^2$$

1. The following histogram represents the number of hours that M.C. students spend studying in a typical week.

2.



- Describe the general shape of this distribution.
- Which would be greater for this data — the mean or the median? **Explain your answer.**
- If someone asked you for the “average” amount that M.C. students study which would give a better representation of the majority of the students — the mean or the median? **Explain!**
- What is the most frequently occurring study time in this data?

2. The following values represent the salaries of the 7 employees in your company (represented in \$10,000s).

22 25 28 32 34 36 40

- a. Determine the *mean* salary for your company.
- b. Determine the *median* salary for your company.
- c. Suppose the owner is criticized for paying low salaries, on average. In 2001 she gives a \$10,000 raise to the person making \$40,000 (who just happens to be her brother-in-law) and no raise to anyone else. Based on this scenario, *what happens to the mean salary? What happens to the median salary?* **Justify your answers!**
- d. The owner declares that “the average salary increased significantly from the year 2000 to 2001.” Give a critique of this claim.

