

## Pre Stats 3.3b Central Tendency Assessments

For the problems below,

1. Find the mean median and mode.
2. Pick the best measure or measures to use in analyzing the specific data.
3. Explain your reasoning.

1) Students in Mrs. Baker's math class at West Jordan Middle received the following scores on their last test. Organize the information and analyze and explain the data.

76, 95, 84, 77, 100, 86, 93, 95,  
70, 84, 94, 98, 78, 30, 97, 85,  
96, 90, 88, 79, 92, 80, 87, 95, 90

2) One statistic used in baseball players is how many bases they steal. This table shows the data for one baseball player's career. Create a graph and/or plot. What might be said about this record?

| Year         | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|--------------|------|------|------|------|------|------|------|------|------|------|------|
| Stolen Bases | 4    | 15   | 10   | 8    | 32   | 24   | 35   | 40   | 37   | 65   | 62   |

3) The following temperatures (taken using Fahrenheit degrees) were taken in Salt Lake City for fifteen days in the month of June. Organize and analyze the data using a graph and/or plot. How could you best describe the temperature during this time in Salt Lake City?

82, 82, 80, 74, 76, 76, 70, 88, 90, 82, 80, 82, 76, 78, 82

4) Raynold Brothers Mortgages prepared mortgages for the following fifteen amounts. Organize and analyze the data using a graph and/or plot. What could you say about these mortgages?

|           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|
| \$95,000  | \$166,000 | \$134,000 | \$360,000 | \$108,000 |
| \$269,000 | \$138,000 | \$137,000 | \$308,000 | \$126,000 |
| \$439,000 | \$144,000 | \$85,000  | \$235,000 | \$159,000 |

5) The Utah Jazz must choose between two players in the NBA draft. One of the ways they are choosing is by looking at the total points scored in games in the previous basketball season. Organize and analyze the data using graphs and/or plots.

Player A: 15, 18, 10, 8, 13, 11, 16, 13, 11, 17, 15

Player B: 8, 19, 6, 23, 5, 17, 7, 20, 17, 4, 21

## Negotiations

Tom is head of the employees' union in Beehive Marketing Corporation. He is talking to Mr. Owens, the president, and trying to negotiate for higher wages for all employees. Because the cost of living is skyrocketing and because no employee in the union earns more than \$18,000, Tom is hoping to get Mr. Owens to improve wages.

Mr. Owens argument is that his costs are going up too and therefore the company is receiving less profit. He thinks the average salary is \$22,000 and doesn't believe the company can afford to raise wages.

At the union meeting, one new employee said that sales clerks make \$10,000 per year, \$4000 less than most workers. This employee is hoping to get the minimum raised to at least \$16,000.

Tom decided to do a careful analysis of the salary information he received from the payroll department. After he makes his analysis, he will present his conclusions to Mr. Owens and the board of directors. Pretend you are Tom. Analyze the statistics below. Then prepare your position for presentation to Mr. Owens and the Beehive board of directors.

In your presentation, discuss the varying opinions about the salaries of the workers. Explain why they are valid or not.

In addition, compare the present salary scale with two different scenarios (possible solutions) to the problem. Support your solutions with data.

Be certain to include measures of central tendency, data spreads, and graphs in your presentation.

| <b>Job Title</b>    | <b>Number of employees</b> | <b>Salary</b>        |
|---------------------|----------------------------|----------------------|
| President           | 1                          | \$250,000            |
| Vice-President      | 2                          | 130,000              |
| Business Manager    | 3                          | 55,000               |
| Department Managers | 12                         | 18,000               |
| Workers             | 30                         | 15,000               |
| Payroll Clerk       | 3                          | 13,500               |
| Secretary           | 6                          | 12,000               |
| Sales Clerk         | 10                         | 10,000               |
| Custodian           | 5                          | 8,000                |
| <b>TOTAL</b>        | <b>72</b>                  | <b>\$1, 593, 500</b> |