Exploration 4A: Koduck Salary Increases

Koduck, a local company that makes pictures of water fowl, has 10 employees and needs to give raises to each of them. The company wants to know if it would be better financially (for the company) to give everyone a 3% raise or to add $1000 to each employee's yearly salary. The yearly salaries of each employee are $24,300; $25,000; $45,000; $40,000; $36,700; $70,000; $19,000; $44,000; $15,000; $43,000.

1. Write down which method (3% raise or at $1000 increase) you think would be better.
2. For whom is your method better, the management, all the employees, or only certain employees?
3. Why did you select this option?
4. What would help you to make a more informed decision?
5. Now, try this in your software. Enter the salary data in one column, and then create formulas to compute the salaries after each of the two methods for the raise. Then, compute the mean and median of each data set using formulas for mean and median.
6. Compare the mean and median before and after each raise. What happened?
7. Explain why you think this happened.

As it turns out, there is a mathematical explanation for why each change happened the way it did. Using algebra, we can calculate what will happen to the mean and median of any set of data after a fixed amount is added to each data value or after a fixed percentage increase.