***Handout #19 — Bill Gates Walks into a Diner - SOLUTIONS***

This example is used to illustrate the difference between the two different types of average: the *mean* and the *median*. Let’s imagine that the salaries in the dinner before Bill Gates walked in were:

|  |  |
| --- | --- |
| **Diner** | **Salary** |
| Anna | $85,000 |
| Bob | $50,000 |
| Cathy | $45,000 |
| Dave | $40,000 |
| Eric | $30,000 |
| Fran | $30,000 |
| Gail | $35,000 |

1. Find the mean and median salary *before* Bill Gates walked into the diner.



The average salary before Bill Gates walked in was $45,000.

30000, 30000, 35000, 40000, 45000, 50000, 85000

The median salary before Bill Gates walked in was $40,000.

1. Are the two measurements pretty similar? Would they represent a “typical” diner’s salary?

The two measurements are similar and could represent a typical diner’s salary (if this data is representative of the diner’s).

Now, Bill Gates walks in with annual income of, say, $1 billion.

1. Find the mean and median salary *after* Bill Gates walked into the diner.



The average salary after Bill Gates walks in is $164,375

30000, 30000, 35000, 40000, 45000, 50000, 85000, 1000000000

The median salary after Bill Gates walks in is $42,500

1. Are the two measurements pretty similar? Would they represent a “typical” diner’s salary?

No, the two measurements are very different and only the median seems a reasonable estimate of a typical diner’s salary.