Meeting 2  Student’s Booklet

Statistics: Averages

April 19  2017  © UCI

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1 BALANCING

Observe the three different examples. What do you see? Discuss in your group.

You can create stories that go along with each picture.

Example (Cookies)
There were two trays of cookies: one with 1, the other with 5. We wanted to distribute these cookies in each tray to get the same cookies in each tray, so we got 3 cookies in each tray. Overall, we did not add or subtract cookies. We just redistributed them to find a balance.
Now it is your turn!
In each of the following situations, indicate the results from balancing the quantities in frames, following the examples just seen.
2 THE AVERAGE

In general, if we have a list of \( n \) numbers, its average is the number such that when multiplied by \( n \) equals the sum of those numbers. This number is larger or equal than the minimum of the numbers, and less or equal to the maximum of the numbers.

For example, if we have four numbers, its average is a single number that when multiplied by 4 equals the sum of those numbers. The average is a “balanced” representation of the different numbers that we had.
Find the average in each situation. Remember to determine how many numbers you have:

**a**
- Numbers: 12, 23, 1, 8
- Average: 13

**b**
- Numbers: 30, 30, 40, 40
- Average: 3/2

**c**
- Numbers: 13, 13, 13, 13
- Average: 13

**d**
- Numbers: 3/2, 4
- Average: 7/2 or 13/2
We need to deliver math textbooks to 9 libraries (see next page), using 9 trucks. A truck can travel to several libraries if it needs to, and a library can receive books from more than one truck. To do so, we can hire one of the four companies, each having 9 trucks with the number of books in each truck as indicated.

We want to make sure that all libraries get the number of textbooks that they ordered, and we want to buy as few books as possible, so that there are just a few undelivered books. Which of the four companies should we hire?

If you want a company that has 9 trucks, each one with the same number of books, and that can deliver the books to satisfy the needs of each library without any undelivered books, how many books should we put in each truck? Explain.
The legends indicate the number of books that each library needs.

1 needs 10 books
2 needs 15 books
3 needs 11 books
4 needs 8 books
5 needs 35 books
6 needs 0 books
7 needs 17 books
8 needs 4 books
9 needs 8 books

The legend for books is as follows:

- 0 books
- 4 books
- 8 books
- 11 books
- 15 books
- 35 books

Santa Ana

Irvine

John Wayne Airport

North Tustin
The chart illustrates different salaries for creative sector jobs, in dollars per year. Approximate these salaries (there are several ways, examples have been provided).

**Creative Sector Orange County Salaries**

- Software Developers, Applications: $99,050
- Architects: $86,070
- Producers & Directors: $77,870
- Commercial & Industrial Designers: $73,050
- Multimedia Artists & Animators: $72,290
- Writers & Authors: $66,010
- Sound Engineering Technicians: $65,390
- Fashion Designers: $60,260
- Interior Designers: $58,600
- Fabric & Apparel Patternmakers: $55,660
- Graphic Designers: $48,940
- Film & Video Editors: $31,190

Notes: Salary data for art, drama and music teachers not available for Orange County.
There are 4 designers careers. What is approximately the average salary of these 4 careers? Guess: is this average considerably higher, about the same or considerately lower than the average salary of all 12 careers? Explain the reason of your choice.

Approximately, how much higher is the highest paid salary than the lowest paid salary?

Approximately, how much lower is the lowest paid salary than the average salary of the highest 3 paid salaries?