

### Module 3 Notes

**Average = Mean** –  $\frac{\text{sum of numbers}}{\text{\# of numbers}}$

Examples:

1. Your score on five tests were 78%, 87%, 98%, 64%, and 91%. What is your average score on these five tests? Round your answer to a tenth of a percentage point.
2. A student's grades were: 64, 23, 54, 44, 46, 81, 72, 73, 82, 45, 89, 73, 83, 73, and 52. His teacher dropped the two lowest grades before taking the average. What is his average? Round your answer to the nearest hundredth.
3. Your average score on four tests was 90%. You received scores of 94%, 88%, and 84% on the first three tests. What did you score on the fourth test?

**Ratio** – comparison of two numbers, 2 to 3, 2:3,  $\frac{2}{3}$ , 2 per 3

Always write a ratio in simplest rational form.

Keep ratio in the same order as the words describe it.

Examples:

1. The ratio of boys to girls in the class was 12 to 16. Reduce this ratio and explain what it means.
2. If 2 packets of cool aid must be mixed with 4 gallons of water to make a fruit punch, what is the ratio of cool aid to water? Reduce the ratio and explain what it means.
3. The ratio of salt in a saline solution is 0.9%. What is the ratio of salt to the saline solution? What is the ratio of water to the saline solution? What is the ratio of salt to water?
4. The nurse was instructed to mix a 35% bleach solution. What is the ratio of bleach to the solution? What is the ratio of water to the solution? What is the ratio of bleach to the water?

**Proportion** – two equal ratios (fractions)

Solve a proportion by cross multiplying and dividing.

Units of measure must be the same.

Order is very important.

Examples:

1.  $9/10 = 27/x$

2.  $0.01/5 = x/2.5$

3. One tablet contains 325 mg of medication. How many tablets contain 975 mg of medication?

4. If the available strength of a certain medicine is 1.5 g per cc, how many cc will a 5g dosage require?

5. How many grams of boric acid crystals are needed to prepare 500 milliliters of a 5% boric acid solution?

6. How many grams of boric acid crystals are needed to prepare 3 liters of a 5% boric acid solution?