Mathematics Preparation For High School Chemistry
Measures Of Central Tendencies: Median & Mean

Student Examples

During a recent experiment, seven different lab groups performed an experiment to determine the density of 1-butanol. The results of their experiment are given below. The accepted value for this density is .80g/ml.

Lab Group	Density (g/ml)
1	.91
2	.86
3	.82
4	.81
5	.80
6	.75
7	.73

The Median = .81g/ml

The Mean = $\bar{x} = \frac{\sum x}{n}$

$= \frac{.91+.86+.82+.81+.80+.75+.73}{7}$

$= \frac{5.68}{7} = .81$

Student Problems

The following data was collected in an experiment to determine the molar volume of a gas.

Group	Value (liters)
1	22.5
2	23.9
3	24.6
4	20.6
5	21.9

What is the median for these experimental values?

What is the mean for these values?

Another experiment was performed to determine the molecular weight of CO_2 gas.

Group	MW (g)
1	43.2
2	46.2
3	40.9
4	44.6

Find the median value.

Find the mean value.

Mathematics Preparation For High School Chemistry
Measures Of Central Tendencies: Median & Mean

Student Examples

During a recent experiment, seven different lab groups performed an experiment to determine the density of 1-butanol. The results of their experiment are given below. The accepted value for this density is .80g/ml.

Lab Group	Density (g/ml)
1	.91
2	.86
3	.82
4	.81
5	.80
6	.75
7	.73

The Median = .81g/ml

The Mean = $\bar{x} = \frac{\sum x}{n}$

$= \frac{.91+.86+.82+.81+.80+.75+.73}{7}$

$= \frac{5.68}{7} = .81$

Student Problems

The following data was collected in an experiment to determine the molar volume of a gas.

Group	Value (liters)
1	22.5
2	23.9
3	24.6
4	20.6
5	21.9

20.6
21.9
22.5
23.9
24.9

What is the median for these experimental values? (22.5)

What is the mean for these values? $113.8 \div 5 =$ (22.76)

Another experiment was performed to determine the molecular weight of CO_2 gas.

Group	MW (g)
1	43.2
2	46.2
3	40.9
4	44.6

40.9
43.2
44.6
+46.2

Find the median value.
$(43.2+44.6) \div 2 =$ (43.9)
Find the mean value.
$174.9 \div 4 =$ (43.7)