SIGMA NOTATION (Σ)

The greek symbol (capital sigma) is denoted by "Σ" - pronounced "sigma".
Σ means to sum or to add up a set of numbers.

If the random variable X has the following values:

X: 1, 2, 4, 6, 10

Then

$\sum x$ = 1 + 2 + 4 + 6 + 10 = 23 (add up the X's)

$\sum x^2$ = 1 + 4 + 16 + 36 + 100 = 157 (square each X then add)

$\left(\sum x\right)^2$ = $(23)^2$ = 529 (add up the X's then square)

Rounding Off vs. Rounding Up

Examples

Round Off to the nearest tenth.	1.2395049123 ≈ 1.2
Round Off to the nearest thousandth.	2.3565789154 ≈ 2.357
Round Up to the nearest integer.	6.2345678321 ≈ 7
Round Up to the nearest tenth.	2.7134695676 ≈ 2.8

Percentages

Converting real numbers to percents or percents to real numbers is an important part of this class.

A real number is converted to a percent by moving the decimal point two places to the right.

0.123 is converted to 12.3%
3/5 is converted to 60%

A percent is converted to a real number by moving the decimal point two places to the left.

14.6% is converted to 0.146
70% is converted to 0.70 or 7/10
2% is converted to 0.02

HOMEWORK PROBLEMS

Summation: Do the following problems given the random variables X and Y.

X: 3, 4, 1, 2, 5
Y: 2, 1, 0, 1, -3

ANSWERS

(1) ΣX = _____

(2) ΣX^2 = _____

(3) $(\Sigma X)^2$ = _____

(4) $\Sigma(X-2)$ = _____

(5) $\Sigma X - 2$ = _____

(6) $\Sigma(X-Y)$ = _____

(7) $\sum \frac{(x-3)^2}{4}$ = _____

(8) ΣXY = _____

(9) $\Sigma X \cdot \Sigma Y$ = _____

(10) $\Sigma y + (\Sigma y)^2 + \Sigma y^2$ = _____

ROUNDING: Do the following problems

(1) Off:nearest tenth 17.8974 ≈ _____

(2) Off:nearest integer 8.53432 ≈ _____

(3) Up:nearest thousandth 34.2345628 ≈ _____

(4) Up:nearest integer 9.0012312 ≈ _____

(5) Off:nearest ten-thousandth (1.234567 + 2.12312) ≈ _____

(6) Up:nearest hundredth 0.23567123 ≈ _____

(7) Up:nearest tenth 0.10181320 ≈ _____

(8) Off:nearest whole number 0.56456 ≈ _____

(9) Off:nearest hundredth 2/3 ≈ _____

(10) Off:nearest hundredth 1/7 ≈ _____

(11) Up:nearest hundredth 1/7 ≈ _____

PERCENTS: Fill in the missing value in one column.

	Real Number	Percent
(1)	0.1546	
(2)		45.3%
(3)	0.20	
(4)		30%
(5)	0.05	
(6)		Twenty Percent
(7)	1/3	
(8)		66.67%
(9)	4/5	
(10)		Three Percent