



1.3: Sigma Notation and Measures of Center

$$\sum_{i=1}^n x_i$$

Consider a set of x-values: $x_1 = 14$, $x_2 = 16$, $x_3 = 15$, $x_4 = 18$, $x_5 = 17$

$$\sum_{i=1}^5 x_i$$

Example) Evaluate the sum.

$$\sum_{i=1}^6 i^2$$



It is convenient to use sigma notation to define the mean of a set of data.

Express the mean of the fastest 100m runs in sigma notation and solve.

As of 8/26/2016, the 10 fastest 100 m runs are as follows:

(source: http://www.alltime-athletics.com/m_100ok.htm)

1	9.58	+0.9	Usain Bolt
2	9.63	+1.5	Usain Bolt
3	9.69	±0.0	Usain Bolt
3	9.69	+2.0	Tyson Gay
3	9.69	-0.1	Yohan Blake
6	9.71	+0.9	Tyson Gay
7	9.72	+1.7	Usain Bolt
7	9.72	+0.2	Asafa Powell
9	9.74	+1.7	Asafa Powell
9	9.74	+0.9	Justin Gatlin

Mean

The following data points represent the NBA players average number of points scored per 48 minutes of play in the 2016-2017 regular season.

http://www.espn.com/nba/statistics/player/_/stat/scoring-per-game/sort/avgPoints/count/241

Player	Average_P...
Russell Westbrook	31.6
James Harden	29.1
Isiah Thomas	28.9
Anthony Davis	28.0
DeMar DeRozan	27.3
Damian Lillard	27.0
DeMarcus Cousins	27.0
LeBron James	26.4
Kawhi Leonard	25.5
Stephan Curry	25.3
Kyrie Irving	25.2
Karl Anthony Towns	25.1
Kevin Durant	25.1
Jimmy Butler	23.9
Paul George	23.7
JJ Redick	15.0
Jae Crowder	13.9
Westley Johnson	2.7



The mean is affected by _____

Example) Calculate the mean of the two data sets.

1. 1, 2, 5, 6, 7, 9, 100
2. 1, 2, 5, 6, 7, 9

Median

Player	Average_P...
Russell Westbrook	31.6
James Harden	29.1
Isiah Thomas	28.9
Anthony Davis	28.0
DeMar DeRozan	27.3
Damian Lillard	27.0
DeMarcus Cousins	27.0
LeBron James	26.4
Kawhi Leonard	25.5
Stephan Curry	25.3
Kyrie Irving	25.2
Karl Anthony Towns	25.1
Kevin Durant	25.1
Jimmy Butler	23.9
Paul George	23.7
JJ Redick	15.0
Jae Crowder	13.9
Wesley Johnson	2.7