Answer on Question 54704, Math, Statistics and Probability

Question:

23, 17, 29, 36, 15, 6, 18, 24, 32, 41, 14, 27, 33, 18, 24

Calculate the mean deviation.

Solution:

The formula for mean deviation looks like:

$$MD = \frac{1}{N}\sum_{i=1}^{N}|x_i - \bar{x}|,$$

where, $\bar{x}$ is the mean of the distribution, $x_i, i = 1, 2, \dots, N$ is each value of a set of data and N is the number of values.

Let's first obtain the mean:

$$\bar{x} = \frac{23+17+29+36+15+6+18+24+32+41+14+27+33+18+24}{15} = \frac{357}{15} = 23.8.$$

Let's find the distance of each value, $|x_i - \bar{x}|$, from that mean:

Value, x_i	Distance from the mean, $\lvert x_i - \bar{x}\rvert$
23	0.8
17	6.8
29	5.2
36	12.2
15	8.8
6	17.8
18	5.8
24	0.2
32	8.2
41	17.2
14	9.8
27	3.2
33	9.2
18	5.8
24	0.2

So, we can get the mean deviation:

$$MD = \frac{0.8+6.8+5.2+12.2+8.8+17.8+5.8+0.2+8.2+17.2+9.8+3.2+9.2+5.8+0.2}{15} = \frac{111.2}{15} = 7.41(3).$$

Answer:

$MD = 7.41(3).$