

Answer on Question#65329 – Math – Statistics and Probability

Question. Find the mean and standard deviation of the following frequency distribution:

Class Intervals	6.45 – 7.25	7.25 – 8.05	8.05 – 8.85	8.85 – 9.65	9.65 – 10.45	10.45 – 11.25	11.25 – 12.05	12.05 – 12.85	12.85 – 13.65
Frequency	7	11	34	67	62	67	33	13	6

Total 300.

Solution. To find the mean and variation we shall construct the following auxiliary table

(see the similar example on <http://www.statcan.gc.ca/edu/power-pouvoir/ch12/5214891-eng.htm>):

Class intervals	Midpoint (x)	Frequency (f)				
6.45 – 7.25	6.85	7	47.95	-3.2	10.24	71.68
7.25 – 8.05	7.65	11	84.15	-2.4	5.76	63.36
8.05 – 8.85	8.45	34	287.3	-1.6	2.56	87.04
8.85 – 9.65	9.25	67	619.75	-0.8	0.64	42.88
9.65 – 10.45	10.05	62	623.1	0	0	0
10.45 – 11.25	10.85	67	726.95	0.8	0.64	42.88
11.25 – 12.05	11.65	33	384.45	1.6	2.56	84.48
12.05 – 12.85	12.45	13	161.85	2.4	5.76	74.88
12.85 – 13.65	13.25	6	79.5	3.2	10.24	61.44
		300	3015			528.64

For example, if we have interval 6.45 – 7.25 then midpoint for it is _____ etc. The mean is equal to $\bar{x} = \frac{47.95}{300} = 0.1598 = 15.98\%$. The variation is $S = \frac{528.64}{300} = 1.7621 = 176.21\%$. Then standard deviation is equal to $\sqrt{1.7621} = 1.3274 = 132.74\%$.

Answer. 33.