Variance of Grouped Data

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Variance of Grouped Data

Interval	Midpoint (x)	Frequency (f)
350 to 400	375	14
400 to 450	425	19
450 to 500	475	31
500 to 550	525	18
550 to 600	575	18
	$\sum f =$	100

$$\bar{x} = 478.5$$

Variance of Grouped Data

The variance of the grouped data is computed as follows:

$$s^2 = \left[\frac{\sum f_i x_i^2}{\sum f} - \left(\frac{\sum f_i x_i}{\sum f} \right)^2 \right]$$

f_i is the frequency for interval i,
x_i is the midpoint for interval i.

Variance of Grouped Data

Interval	Midpt. x	x^2	Freq. f	$f \times x^2$
350 to 400	375		14	
400 to 450	425		19	
450 to 500	475		31	
500 to 550	525		18	
550 to 600	575		18	
			$\sum fx^2$	

Variance of Grouped Data

$$s^2 = \left[\frac{\sum f_i x_i^2}{\sum f} - \left(\frac{\sum f_i x_i}{\sum f} \right)^2 \right]$$

Variance of Grouped Data

Standard Deviation of Grouped Data: To compute the standard deviation of the grouped data, simply compute the square root of the variance.

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