Introduction to Statistics
Activity 3.2b **SOLUTIONS**

Great Country Life Expectancy

a) What is the mean of the following data? **Mean is 67.33**
b) Fill in this form to determine its standard deviation.

Year	Great Country	Deviation from mean	Abs VAL	Squared
1940	55	**55 - 67.33 = -12.33**	**12.33**	152.03
1950	62	**62 - 67.33 = -5.33**	**5.33**	28.41
1960	64	**64 - 67.33 = -3.33**	**3.33**	11.09
1970	65	**65 - 67.33 = -2.33**	**2.33**	5.43
1980	69	**69 - 67.33 = 1.67**	**1.67**	2.79
1990	71	**71 - 67.33 = 3.67**	**3.67**	13.47
2000	72	**72 - 67.33 = 4.67**	**4.67**	21.81
2010	73	**73 - 67.33= 5.67**	**5.67**	32.15
2020	75	**75 - 67.33 = 7.67**	**7.67**	58.83

$$s = \sqrt{\frac{\text{sum all (observations} - \text{mean)}^2}{n - 1}}$$

a) What is the standard deviation for life expectancy in Great Country?

Sum of the squares is 326.01. So SD is $\sqrt{\frac{326.01}{9-1}} \approx 6.38$

b) What is the mean of the following data? **Mean is 69.33**
c) Fill in this form to determine its standard deviation.

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Year	Super Country	Deviation from mean	Abs VAL	Squared
1940	42	42 - **69.33 = -27.33**	**27.33**	746.93
1950	49	49 - **69.33 = -20.33**	**20.33**	413.31
1960	55	55 - **69.33 = -14.33**	**14.33**	205.35
1970	68	68 - **69.33 = -1.33**	**1.33**	1.77
1980	65	65 - **69.33 = -4.33**	**4.33**	18.75
1990	82	82 - **69.33 = 13.33**	**12.67**	160.53
2000	79	79 - **69.33 = 10.33**	**9.67**	93.51
2010	89	89 - **69.33 = 20.33**	**19.67**	386.91
2020	95	95 - **69.33 = 26.33**	**25.67**	658.95

d) What is the standard deviation for life expectancy in Super Country?

Sum of the squares is 2,686.01. So SD is $\sqrt{\frac{2{,}686.01}{9-1}} \approx 18.32$

What if I mistyped and accidentally created an outlier?

e) Which measure(s) of **center** are resistant to outliers? **Median**

f) Which measure(s) of **spread** are resistant to outliers? **IQR**