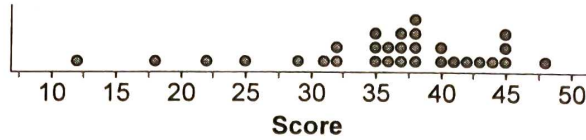


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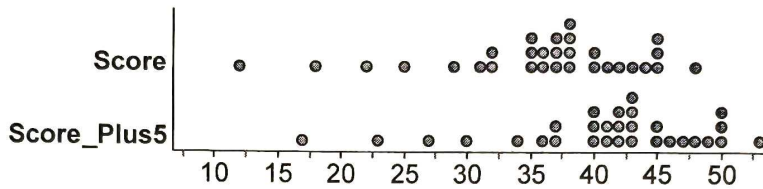
Transforming Data:

1. Here are a graph and table of summary statistics for a sample of 30 test scores. The maximum possible score on the test was 50 points.



	n	\bar{x}	s_x	Min	$Q1$	M	$Q3$	Max	IQR	Range
Score	30	35.8	8.17	12	32	37	41	48	9	36

Suppose that the teacher was nice and added 5 points to each test score. How would this change the shape, center, and spread of the distribution? Here are graphs and summary statistics for the original scores and the +5 scores:

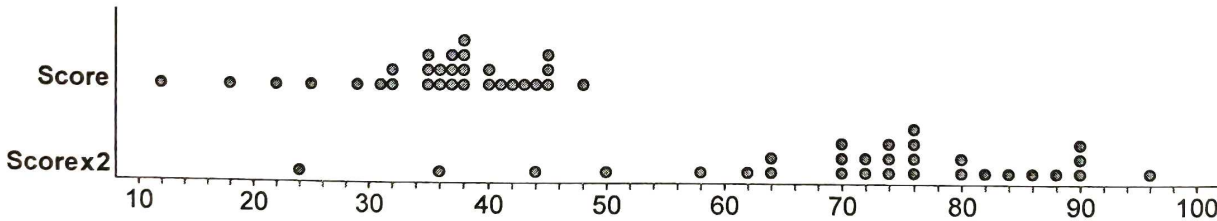


	n	\bar{x}	s_x	Min	$Q1$	M	$Q3$	Max	IQR	Range
Score	30	35.8	8.17	12	32	37	41	48	9	36
Score + 5	30	40.8	8.17	17	37	42	46	53	9	36

What can we conclude about the transformed distribution?

Shape: STAYS the SAME Center: INCREASES by 5
 (mean, median, Quartiles) Spread: STAYS the SAME
 (IQR, st dev, Range)

2. Suppose that the teacher in the previous alternate example wanted to convert the *original* test scores to percents. Since the test was out of 50 points, he should multiply each score by 2 to make them out of 100. Here are graphs and summary statistics for the original scores and the doubled scores.



	n	\bar{x}	s_x	Min	$Q1$	M	$Q3$	Max	IQR	Range
Score	30	35.8	8.17	12	32	37	41	48	9	36
Score x 2	30	71.6	16.34	24	64	74	82	96	18	72

What can we conclude about the transformed distribution?

Shape: HAS the same shape, BUT more spread out and has been shifted. Center: Doubled Spread: Doubled