

Kruskal-Wallis Test for k-Sample Inference

Example: From Conover (1999, p. 291), the following data represent corn yields per acre from four different fields where different farming methods were used.

	Method I		Method II		Method III		Method IV	
	Yield (X)	Rank (R)	Yield (X)	Rank (R)	Yield (X)	Rank (R)	Yield (X)	Rank (R)
	83	11	91	23	101	34	78	2
	91	23	90	19.5	100	33	82	9
	94	28.5	81	6.5	91	23	81	6.5
	89	17	83	11	93	27	77	1
	89	17	84	13.5	96	31.5	79	3
	96	31.5	83	11	95	30	81	6.5
	91	23	88	15	94	28.5	80	4
	92	26	91	23			81	6.5
	90	19.5	89	17				
			84	13.5				
sample size	9		10		7		8	
mean	90.56		86.4		95.71		79.88	
variance	13.28		14.27		13.24		2.982	
rank sum	196.5		153		207		38.5	

Note that the grand sample mean $\bar{x} = 87.882$ is and sample variance is $s^2 = 41.319$.