MA_615_HW_Formating Exercise

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Extract From:

Bradley Efron and Trevor Hastie

Computer Age Statistical Inference: Algorithms, Evidence and Data Science

Cambridge University Press, 2016

https://web.stanford.edu/~hastie/CASI_files/PDF/casi.pdf

Modern Bayesian practice uses various strategies to construct an appropriate "prior" $g(\mu)$ in the absense of prior experience, leaving many statisticians unconvinced by the resulting Bayesian inferences. Our second example illustrates the difficulty.

Table 3.1 *Scores from two tests taken by 22 students,* **mechanics** *and* **vectors**

	1	2	3	4	5	6	7	8	9	10	11
mechanics	7	44	49	59	34	46	0	32	49	52	44
vectors	51	69	41	70	42	40	40	45	57	64	61

	12	13	14	15	16	17	18	19	20	21	22
mechanics	36	42	5	22	18	41	48	31	42	46	63
vectors	59	60	30	58	51	63	38	42	69	49	63

Table 3.1 shows the scores on two tests, **mechanics** and **vectors**, achieved by $n = 22$ students. The sample correlation coefficient between the two scores is $\hat{\theta} = 0.498$,

$$\hat{\theta} = \sum_{i=1}^{22}(m_i - \bar{m})(v_i - \bar{v}) \bigg/ \left[\sum_{i=1}^{22}(m_i - \bar{m})^2 \sum_{i=1}^{22}(v_i - \bar{v})^2\right]$$

with m and v short for **mechanics** and **vectors**, $\bar{m}$ and $\bar{n}$ their average ages.