§ 6B. MEASURES OF VARIATION

JOHN ADAMSKI
12/13/14

15.

EAST COAST

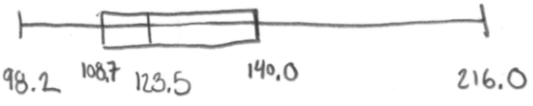
(a) $\text{MEAN} = \frac{809.8}{6} = 135.0$

$\text{MEDIAN} = \frac{111.5 + 135.4}{2} = 123.5$

$\text{RANGE} = 216.0 - 98.2 = 117.8$

(b) LOWER QUARTILE: 108.7

UPPER QUARTILE: 140.0



(c)

DATA	DATA - MEAN	(DATA - MEAN)^2
98.2	-51.8	2683.24
108.7	-26.3	691.69
135.4	0.4	.16
111.5	-23.5	552.25
216.0	81	6561
140.0	5	+ 25

TOTAL: 10513.34

$\text{S.D.} = \sqrt{\frac{10513.34}{6-1}} = 45.85$

(d) $\text{S.D} \approx \frac{216.0 - 98.2}{4} = 29.45$

WEST COAST

$\text{MEAN} = \frac{874.9}{6} = 145.8$

$\text{MEDIAN} = \frac{144.8 + 155.8}{2} = 150.3$

$\text{RANGE} = 182.4 - 113.2 = 69.2$

(b) LOWER QUARTILE: 122.7

UPPER QUARTILE: 156.0

DATA	DATA - MEAN	(DATA - MEAN)^2
155.8	10	100
113.2	-32.6	1062.76
144.8	-1	1
182.4	36.6	1339.56
156.0	10.2	104.04
122.7	-23.1	+ 533.61

TOTAL: 3140.97

$\text{S.D.} = \sqrt{\frac{3140.97}{6-1}} = 25.06$

$\text{S.D} \approx \frac{182.4 - 113.2}{4} = 17.3$

(e) EAST COAST HAS LOWER CENTER & HIGHER VARIATION.

WEST COAST HAS HIGHER CENTER & LOWER VARIATION.

17.

NO TREATMENT	TREATMENT

(a) MEAN $= \frac{.92}{5} = .184$

MEDIAN $= .16$

RANGE $= .37 - .02 = .35$

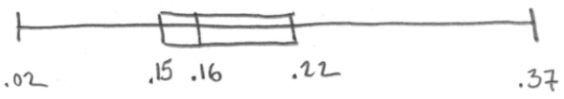
MEAN $= \frac{6.67}{5} = 1.33$

MEDIAN $= 1.07$

RANGE $= 2.38 - .27 = 2.11$

(b) LQ $= .15$

UQ $= .22$



LQ $= .92$

UQ $= 2.03$

(c)

DATA	DATA − MEAN	(DATA − MEAN)^2
.15	−.034	.001156
.02	−.164	.026896
.16	−.024	.000576
.37	.186	.034596
.22	.036	.001296
	+	
	TOTAL:	.06452

$SD = \sqrt{\frac{.06452}{5-1}} = .127$

(c)

DATA	DATA − MEAN	(DATA − MEAN)^2
2.03	.7	.49
.27	−1.06	1.1236
.92	−.41	.1681
1.07	−.26	.0676
2.38	1.05	1.1025
	+	
	TOTAL:	2.9518

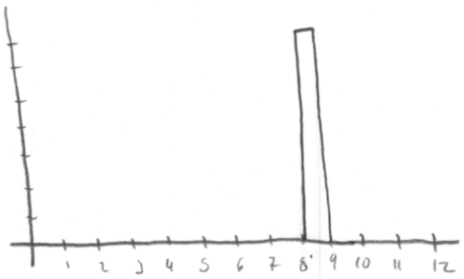
$SD = \sqrt{\frac{2.9518}{5-1}} = .859$

(d) $SD \approx \frac{.35}{4} = .0875$

$SD \approx \frac{2.11}{4} = .5275$

(e) TREES WITH FERTILIZER WEIGH MUCH MORE WITH HIGHER VARIATION.

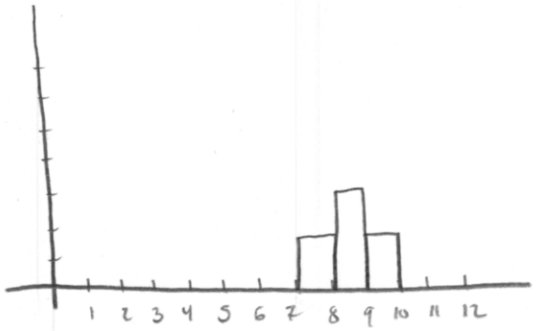
19.

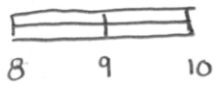


1
9

LOWEST = LQ = MED = UQ = HIGHEST = 9

S.D. = 0

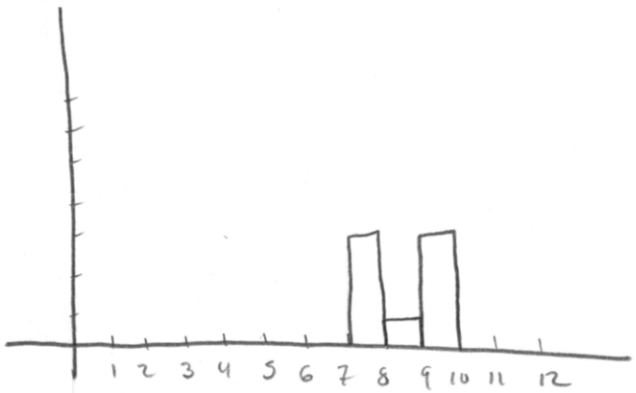




LOWEST = LQ = 8 S.D. = .8165

MEDIAN = 9

UQ = HIGHEST = 10

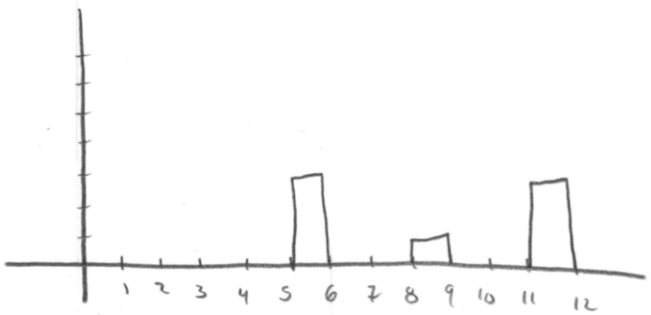


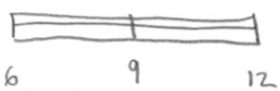
S.D. = 1

LOWEST = LQ = 8

MEDIAN = 9

UQ = HIGHEST = 10



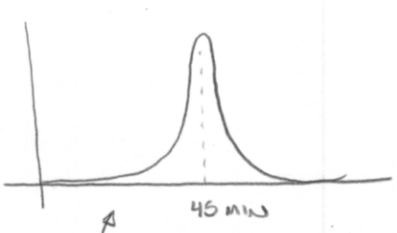


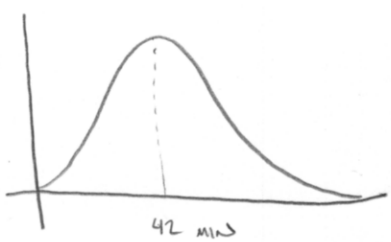
LOWEST = LQ = 6 S.D. = 3

MEDIAN = 9

UQ = HIGHEST = 12

21.





I'D ORDER FROM HERE. I MAY WAIT SLIGHTLY LONGER, BUT I'M MORE CERTAIN ABOUT HOW LONG I WILL WAIT. (LESS VARIATION)

25. MORE COMMON IN PAST.

LESS VARIATION TODAY MEANS BATTING AVERAGES MORE TIGHTLY CLUSTERED AROUND THE MEAN.