Test One Answers - Page 282

Solutions to Page 282

1. D
2. E
3. B
4. C
5. C
6. C
7. E
8. E
9. D
10. D
11. D
12. B
13. B
14. A

1. outliers on the high end increase the mean but not the median.

2. if 2 inches is the 90th percentile, then the z score is 1.28... 2 inches/ 1.28 = 1.56

So, one standard deviation represents 1.56"

3. When multiplying data, mean follows multiplication but standard deviation does not change.

4. blocking experimental units by gender requires a male and female in each group.

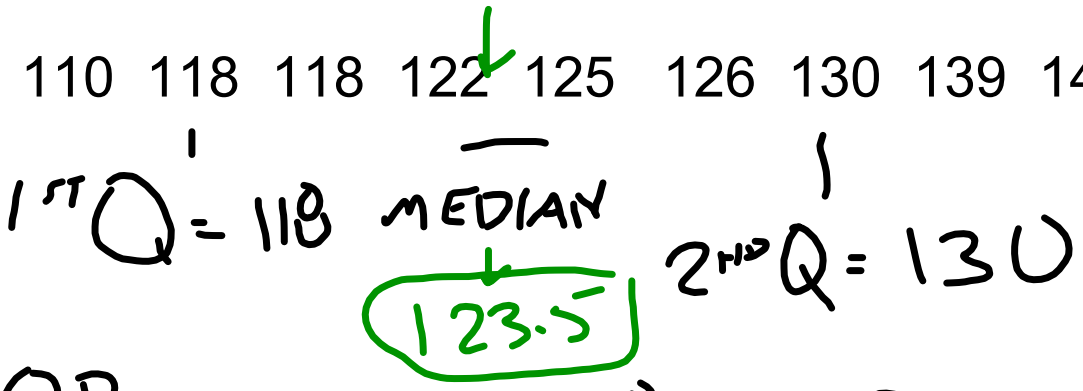
5. a slope of 3 would add 9 millimeters to a weight that is increased by 3 grams.

6. mean is 225, standard deviation =

(375 - 225)/3 = 50

7. other variables can lurk in data...

8. 96 110 118 118 122 125 126 130 139 145



IQR = 130 - 118 = 12

1.5 x IQR = 1.5 x 12 = 18

110 118 118 122 125 126 130 139 145

IQR = 16.5

9. 1st statement is saying that as the number of days since purchase go up, that the amount of powder goes up...hmmm

10. **stratified random sample** takes takes each group of subjects and draws randomly from each of those groups. Stratified random sampling is a method of sampling that involves the division of a population into smaller sub-groups known as strata.

11. brand of gasoline... single test car.. add weights... change gasoline.

Random tests of the 9 different scenarios..

but why?

12. A(2,22), B(10,4), C(6,14). D(14,2), E(18,-4)

The residual for which of the five points has the largest absolute value

correlation coefficient

$$r = \frac{1}{n-1}\sum\left(\frac{x-\bar{x}}{s_x}\right)\left(\frac{y_i-\bar{y}}{s_y}\right)$$

$\bar{x} = 10$

$\bar{y} = 7.6$

$$s_x = \sqrt{\frac{(2-10)^2 + (10-10)^2 \ldots + (18-10)^2}{n-1}}$$

$$s_x \sqrt{\frac{8^2 + 0^2 + -4^2 + 4^2 + 8^2}{4}}$$

$$= \sqrt{40} \quad s_x = 6.324$$

$$s_y = \sqrt{\frac{27.36 + 12.96 + 40.96 + 31.36 + 34.56}{4}}$$

$$s_y = 10.33$$

$$r = \frac{1}{n-1} \sum \left(\frac{x - \bar{x}}{s_x} \right) \left(\frac{y_i - \bar{y}}{s_y} \right)$$

n = 5,

12. A(2,22), B(10,4), C(6,14).
D(14,2), E(18,-4)

Stat - linreg - 2nd stat (L1), 2nd stat (L2)

y = ax + b

a = -1.6

b = 23.6

r2 = .958

r = -.979

y = a + bx

y = -1.6 + 23.6x

|1.6| = 1.6

|-3.6| = 3.6

(10,4)

0 = 0

|.8| = .8

|1.2| = 1.2