

Zak

Dios
4120

William

HW-1

Written

1. Ordinal data has a specific ordering. Nominal data has no numerical relationship between values
2. Relative frequency would be useful when comparing two datasets of different sizes

3. a. discrete
b. ordinal
c. binary
d. continuous
e. binary
f. ordinal
g. discrete
h. nominal

4. a. $\frac{1}{n} \sum_{i=1}^{13} X_i \approx \frac{1}{13} \sum_{i=1}^{13} X_i \approx \boxed{25.6}$ months

b. $\boxed{120}$ months

c. $[0.1, 96]$

d. $IQR = Q_3 - Q_1$

$= 38 - 4$

$= \boxed{34}$ months

5. a. mean $\frac{1}{5} \sum_{i=1}^5 (X_i) = \boxed{12.94 \text{ mm}}$ Range = $[9.2, 18.1]$
median = $\boxed{11.4 \text{ mm}}$

std = $\sqrt{\frac{1}{5-1} \sum_{i=1}^5 (X_i - 12.94)^2} = 3.6$

b $\sum_{i=1}^5 (X_i - 12.94) = (9.2 - \bar{X}) + (10.9 - \bar{X}) + (11.4 - \bar{X}) + (15.1 - \bar{X}) + (18.1 - \bar{X})$
 $= -3.74 + -2.04 + -1.54 + 2.16 + 5.16$
 $= 0$

c. Mean = $\frac{1}{6} \sum_{i=1}^6 X_i = 21.98$ // median = 22.05

std dev = $\sqrt{\frac{1}{6-1} \sum_{i=1}^6 (X_i - 21.98)^2} = 7.14$ // range = $[10.7, 32.5]$

Zak

Gillian

Bigs
4/20

HW-1 Cont

6. Based on the data presented, no. While there is a positive slope in deaths overtime, there is no data presented that represents public health. Additional variables, like % of population with chronic disease, access to sanitation, etc. would be necessary to prove this relationship.