

11-5 Measures of Variation ANSWER KEY:

HW: #1-5, 10-13, 18-22, 28-30, 38-39

① 27.2

② $Q_1 = 1.0$
median = 1.3
 $Q_3 = 1.8$

③ IQR = .8

④ 28.1 is outlier

⑤ The spread of the data is 27.2 million speakers. the middle number is 1.3 million. $\frac{1}{4}$ had below 1.0 million and $\frac{1}{4}$ had above 1.8 million. Half fell in the IQR which was the interval 1.0 - 1.8 so .8 million

⑧ 1095000

⑨ $Q_1 = 8000$
median = 9000
 $Q_3 = 24500$
IQR = 16500

⑩ 1,100,000

⑪ Arthropods are an outlier as it is well above the other data values and greater than 49250 many of the animal cluster at 8000-9000

⑩ 4

⑪ $Q_1 = 5$
median = 6
 $Q_3 = 7$
IQR = $7 - 5 = 2$

⑫ none

⑬ The data has a small range = 4 with an IQR of 2 making the data clustered together. There are no outliers which doesn't impact the data.

⑫ 22

Brandon
min = -6
 $Q_1 = -3$
median = -1
 $Q_3 = 3$
max = 4
range = 10

Rashan
min = -5
 $Q_1 = -4$
median = -1
 $Q_3 = 4$
max = 5
range = 10

⑫ cont \Rightarrow The spread (range) are the same as well as the median.

\Rightarrow Brandon had the best score @ 6 under (-6)
Rashan had the worst score @ 5 over (5)

28) min = 1.5
 $Q_1 = 1.5$
 med = 1.8
 $Q_3 = 2.4$
 max = 3.6
 range = 2.1
 IQR = .9

mean = 1.99
 mode = 1.5

29) $.9 \times 1.5 = 1.35$

$1.5 - 1.35 = .15$
 $2.4 + 1.35 = 3.75$

no outliers

30) Most magnitude were 1.5 with 7 of the 17.
 The spread was 2.1 mag.
 There were no outliers
 but one over 3 at 3.6

38) C \rightarrow should be 4 equal parts

39) H \rightarrow IQR = 3 $3 \times 1.5 = 4.5$
 $9 + 4.5 = 13.5$
 so 14 is the outlier not 11.