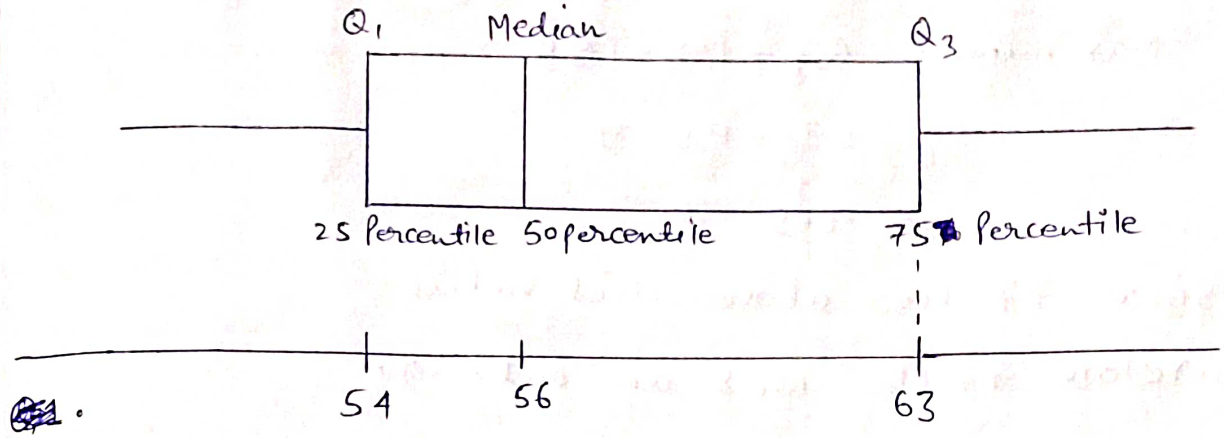

Q1. Since the 63 lbs hive coincides with 75 Percentile line, therefore percentage of hives having 63 lbs or below = 75%

Q2. Percentage of hives having 56 lbs or more $\simeq$ 50%

Q3. The middle 50% of hives contained between 54 lbs and 63 lbs.

Q4 min = 52

25th percentile (Q_1) = 54

median = 56

75th percentile (Q_3) = 63

max = 77

IQR = 63 − 54

= 9

Q.5 Yes 77 lbs was an outlier.

Maximum $= Q_3 + 1.5 \cdot IQR$

$= 63 + 1.5 \times 9$

$= 76.5$

Since 77 lies above this value therefore 77 lbs was an outlier.

Q.6 The shape of this display is skewed right. because the median is closer to the shorter whisker.

Q.7. The best measure of center and spread are median and IQR respectively.

Median is preferred measure of center because it is more resistant to outliers. IQR is also not much affected by outliers and therefore it is the best measure of spread.

Q8. Since the shape of the display is skewed right therefore mean will be greater than median.

Q9. He is not correct because most of the hives are contained between 54 lbs and 63 lbs.

Q11. Minimum = 0

$Q_1 = 20$

Median = 30

$Q_3 = 80$

Maximum = 150

IQR = 80 - 20

= 60

Q12: Minimum = 0

$Q_1 = 10$

Median = 18

$Q_3 = 20$

Maximum = 38

IQR = 20 - 10

= 10

Q13: Variability of the female box plot is more than that of male's because IQR of females is greater than IQR of males.

IQR (females) = 60

IQR (Males) = 10

Q14: Median cost of females (30) is higher than ~~the~~ median cost of males (18)

Q15: 25% of the male haircuts costs more than $20.

Q16: Median = 18

Maximum = 38

therefore the top 50% of male haircuts are between 18 and ~~38~~ $38.

Q17: 25% of female haircuts costs less than $20 because $Q_1 = \$20$

Q18: Minimum = 0

Median = 30

therefore the bottom 50% of female haircuts are between 0 and $30.

Q19: for AFC

~~Q19.~~ Minimum = 19000 ~~(for AFC)~~

$Q_1 = 20200$

Median = 22000

$Q_3 = 24000$

Maximum = 26000

$IQR = Q_3 - Q_1$

$= 24000 - 20200$

$= \$3800$

Q20: for NFC

Minimum = ~~20200~~ $20200 - 1.5 \times 3800 = 14500$

$Q_1 = 20200$

Median = 23500

$Q_3 = 24000$

Maximum = 28200

$IQR = Q_3 - Q_1$

$= 24000 - 20200$

$= \$3800$

Q21: Both conferences have the same variability because IQR of both conferences is equal to $3800.

IQR for AFC = 24000 - 20200

$= \$3800$

IQR for NFC = 24000 - 20200

$= \$3800$

Q22: The top 50% of AFC team salaries are between 22000 and 26000.

Q23: The middle 50% of NFC team salaries are between 20200 and 24000

Q 24: Maximum for AFC = $Q_3 + 1.5 \times IQR$

$= 24000 + 1.5 \times 3800$

$= 29700$

therefore the labeled star is an outlier as it is beyond 29700.

Q25. The shape of the AFC box plot is normal or symmetrical.

Mean = Median

Q26. The shape of the NFC boxplot is left skewed.

mean < median