

5 Explore Estimate the mean of the data set displayed in each histogram.

The histogram shows the ages of teachers in a high school.

To estimate the mean, first find the midpoint of each interval, and multiply by the frequency.

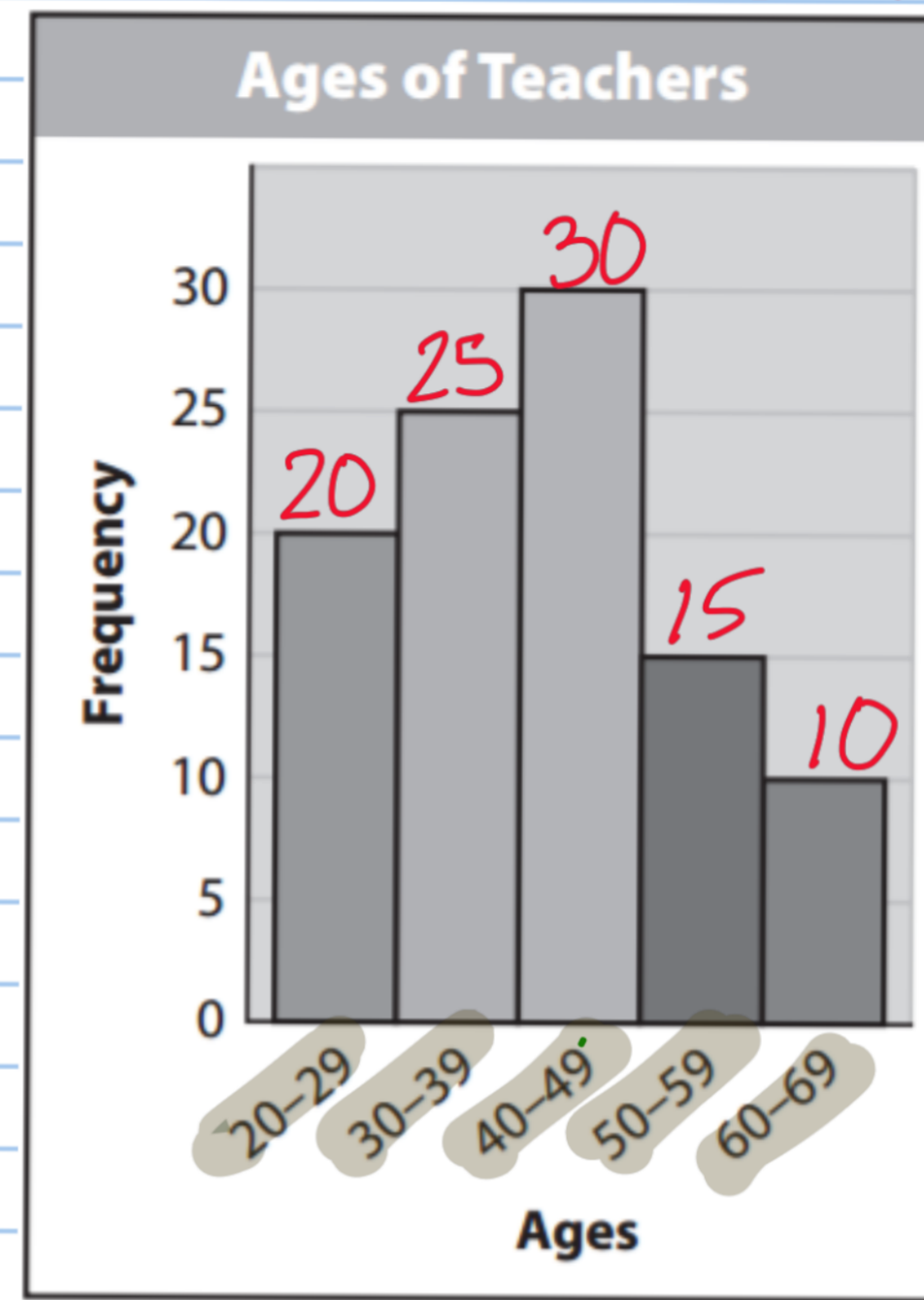
1st interval: $\left(\frac{20+29}{2}\right)(20) = \frac{49}{2}(20) = 24.5(20) = 490$

2nd interval: $\left(\frac{30+39}{2}\right)(25) = \frac{69}{2}(25) = 34.5(25) = 862.5$

3rd interval: $\left(\frac{40+49}{2}\right)(30) = \frac{89}{2}(30) = 44.5(30) = 1335$

4th interval: $= 817.5$

5th interval: 645



$= 100$

$$\text{Mean } \bar{x} = \frac{490 + 862.5 + 1335 + 817.5 + 645}{20 + 25 + 30 + 15 + 10} = \frac{4150}{100}$$

41.5

The mean age is 41.5

6 Explore

Estimate the mean of the data set displayed in each histogram.

The histogram shows the length, in days, of Maria's last vacations.

Estimate the mean of the data set displayed in the histogram

1st interval: 25

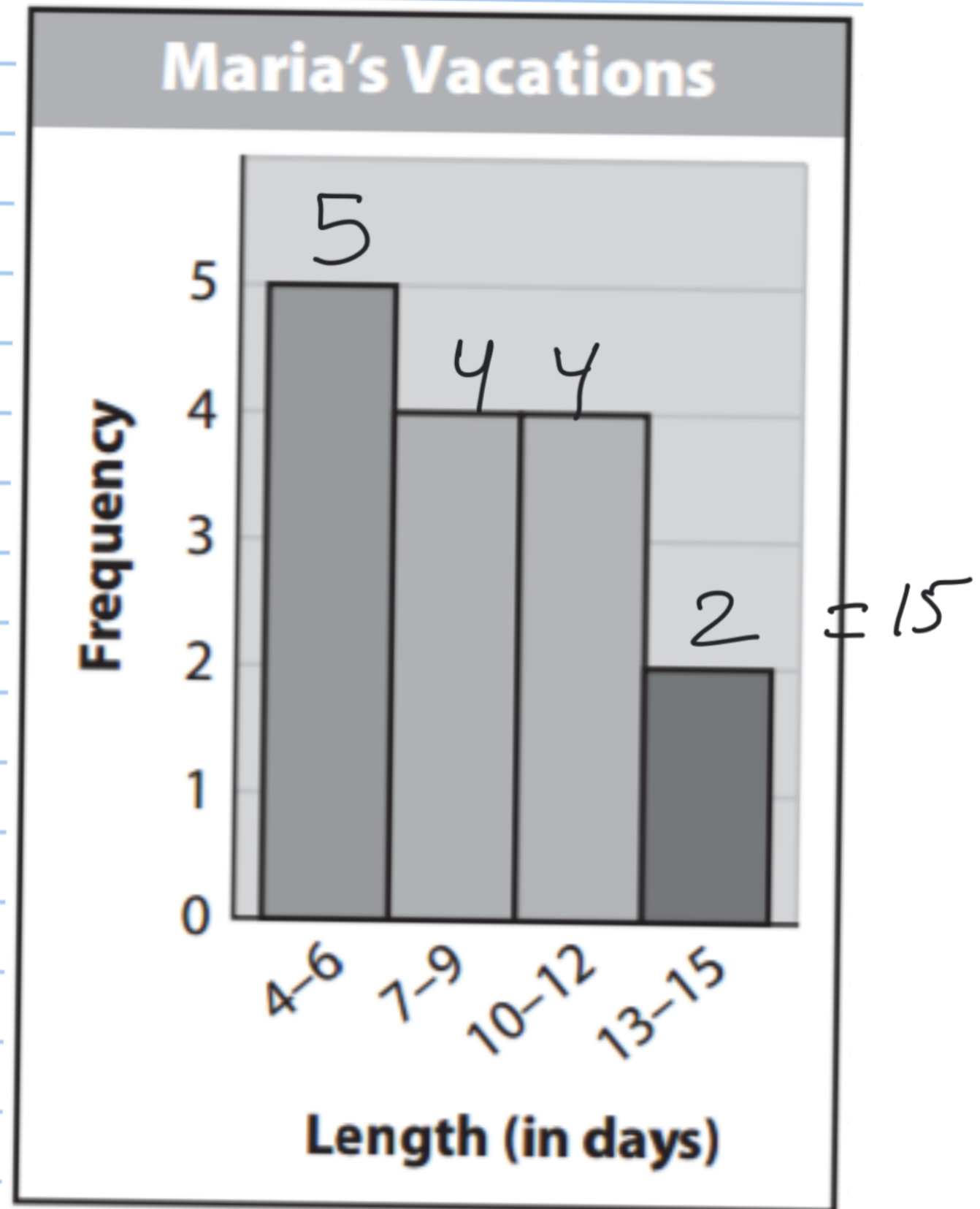
2nd interval: 32

3rd interval: 44

4th interval: 28

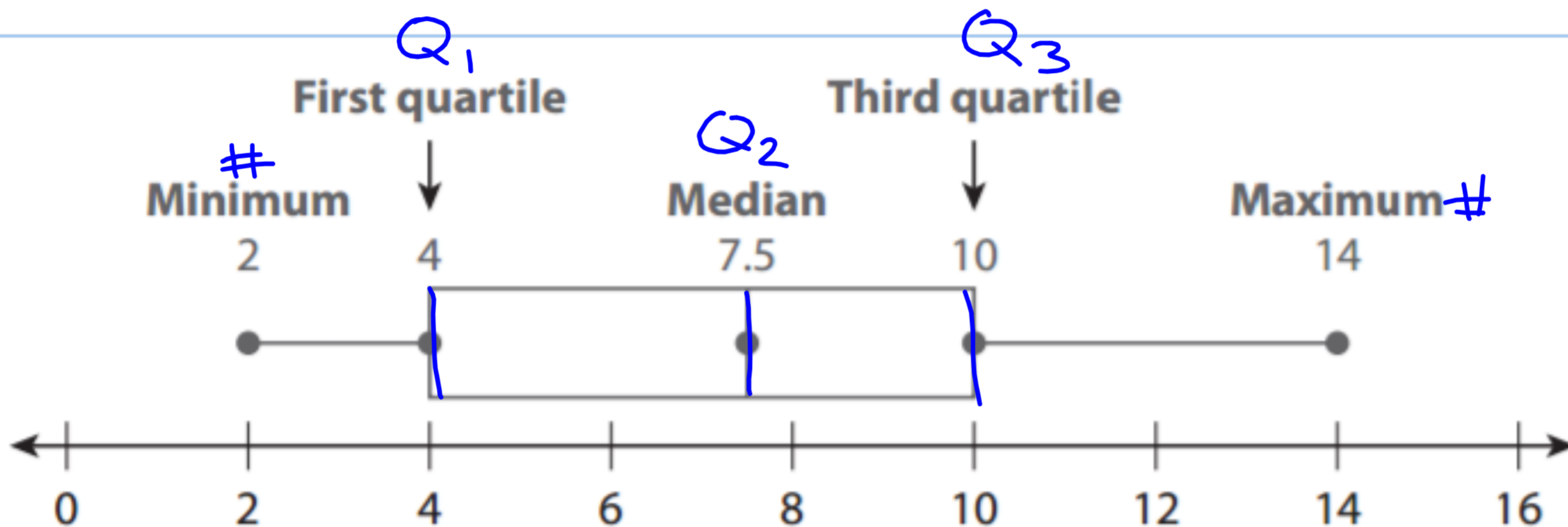
$$\text{mean} = \frac{129}{15} = 8.6$$

The mean length in days is 8.6



Constructing Box Plots - Vocabulary Day 2

Box Plot - can be used to show how the values in a data set are distributed. You need 5 values to make a box plot: the minimum (or least value), first quartile, median, third quartile, and maximum (or greatest value).



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Explore

Use the data to make a box plot.

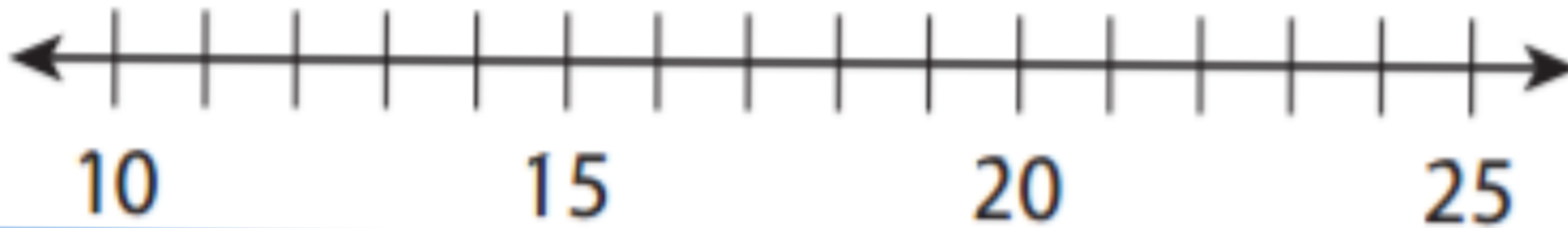
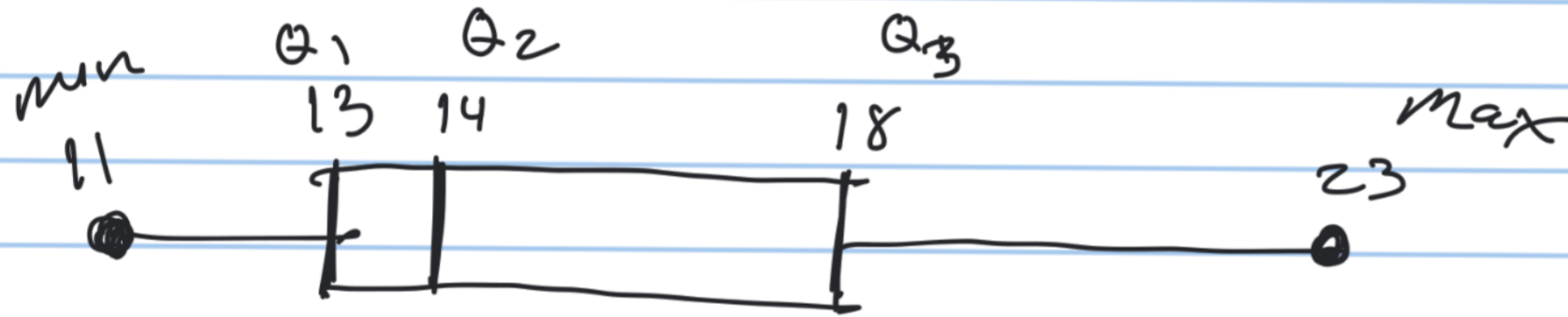
~~13~~, ~~14~~, ~~18~~, ~~13~~, ~~12~~, ~~17~~, 15, ~~12~~, ~~13~~, 19, ~~11~~, ~~14~~, ~~14~~, ~~18~~, 22, 23

min ↓ 11, 12, 12, 13, 13, 13, 14, 14 | 14, 15, 17, 18, 18, 19, 22, 23

$$Q_1 = \frac{13+13}{2} = 13$$

$$Q_2 = \frac{14+14}{2} = 14$$

$$Q_3 = \frac{18+18}{2} = 18$$



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Explore

Use the data to make a box plot.

~~25~~, ~~28~~, ~~26~~, ~~16~~, ~~18~~, ~~15~~, ~~25~~, ~~28~~, ~~26~~, ~~16~~

15, 16, 16, 18, 25, 25, 26, 26, 28, 28

Q₁

Q₂ = 25

Q₃

