

Enrich

Median and Mean of Grouped Data

To find the median of grouped data, add a column for the *cumulative frequency*. This is the total of the frequencies up to and including the frequency in a given row.

Ages	Frequency	Cumulative Frequency
20–29	16	16
30–39	22	38
40–49	20	58
50–59	17	75

The last number in the cumulative frequency column will equal the number of data items. In this example, there are 75 data items. So, the median will be the 38th item. The median age is in the interval 30–39. To find the mean, multiply the frequency of each interval by the midpoint of the interval. Then divide by the total number of data items.

$$\frac{(16 \times 24.5) + (22 \times 34.5) + (20 \times 44.5) + (17 \times 54.5)}{75} \approx 39.6$$

Exercises

Find the interval for the median and the mean to the nearest tenth.

1. Add this data to the table in the example: 18 people ages 60–69, 12 people ages 70–79, and 5 people ages 80–89.
2. The table shows people who prefer rock music.

People who Prefer Rock Music

Age	9–12	13–16	17–20	21–24	25–28	29–32
Frequency	4	12	25	27	16	36

3. The histogram shows people who watch ice skating on television.

People who Watch Ice Skating

