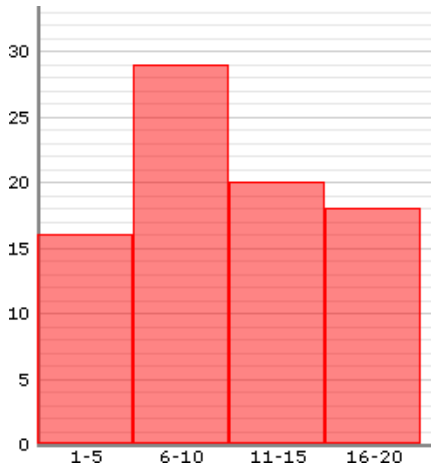


Worksheet: Histograms

Name: _____

1. You conduct a survey asking students how many CDs they own. The results are shown in the histogram below. How many students own 11 to 15 CDs?



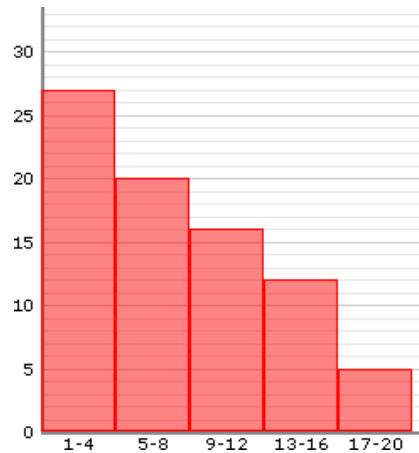
- a) 16
- b) 18
- c) 20
- d) 29

2. You conduct a survey asking students how many CDs they own. The results are shown in the table below. If you made a grouped-frequency table using equal-size intervals that begin with multiples of 3, which interval would have the greatest frequency?

CDs	Frequency
0	2
1	3
2	3
3	7
4	5
5	7
6	2
7	3
8	2
9	1
10	0
11	1

- a) 0–2 CDs
- b) 3–5 CDs
- c) 6–8 CDs
- d) 9–11 CDs

3. You conduct a survey asking students how many CDs they own. The results are shown in the histogram below. Based on this histogram, which of the following statements is true?



- a) The number of students owning 2 CDs must be greater than the number of students owning 10 CDs
- b) The number of students owning 10 CDs must be greater than the number of students owning 2 CDs
- c) More than half of the students surveyed own 1 to 4 CDs.
- d) None of the above are true.
4. If the size of a histogram's intervals is decreased, and its scale remains the same, which of the following statements will be true?
- a) The height of the bars will decrease.
- b) The total number of bars will decrease.
- c) The width of the bars will increase.
- d) Each bar will represent more data items than before.

Answers:

1. C — 20

Explanation: 20 students own 11 to 15 CDs. The height of a histogram bar indicates the frequency of data items in that interval. The bar that represents 11–15 CDs has a height of 20, therefore there are 20 students that own 11 to 15 CDs.

2. B — 3–5 CDs

Explanation: The interval with the greatest frequency would be 3–5 CDs. From the survey results, 7 students have 3 CDs, 5 students have 4 CDs, and 7 students have 5 CDs. Therefore, 19 students have between 3 and 5 CDs. The other intervals have lower frequencies.

3. D — None of the above are true.

Explanation: None of the above are true. Although the interval 1–4 has 27 data items and the interval 9–12 only has 16, this does not necessarily mean that more students own exactly 2 CDs than own exactly 10 CDs. For example, it is possible that no students own exactly 2 CDs. It is also not correct to conclude that more than half of the students own 1–4 CDs. Although this is the most frequently occurring interval, there are only 27 students in it. The other intervals have a combined total of 53 students.

4. A — The height of the bars will decrease.

Explanation: If the size of a histogram's intervals is decreased, and its scale remains the same, the height of the bars will decrease. When the intervals become smaller in size, there will be more histogram bars for a given range of data, but there will also be fewer data items within each interval. Since the bars' height represents the number of items in each interval, reducing the interval size will also reduce the height of the histograms' bars.