# *Basic Statistics for Business and Economics (Canadian) 6th edition Lind Test Bank*

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# Chapter 02
# Describing Data: Frequency Tables, Frequency Distributions, and Graphic Presentation

## Multiple Choice Questions

1. (i) A frequency table is a grouping of qualitative data into mutually exclusive classes showing the number of observations in each class.
(ii) Simple bar charts may be constructed either horizontally or vertically.
(iii) A relative frequency table shows the fraction or percent of the number of observations in each class.
**A.** (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
C. (i) and, (iii) are correct statements but not (ii).
D. (ii) and, (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Learning Objective: 02-02 Display a frequency table using a bar or pie chart.*
*Topic: 02-02 Constructing A Frequency Table*
*Topic: 02-05 Bar Charts*

2. (i) A frequency table is a grouping of qualitative data into mutually exclusive classes showing the number of observations in each class.
(ii) Simple bar charts may be constructed either horizontally or vertically.
(iii) A bar chart is a graphic representation of a frequency table.
**A.** (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
C. (i) and, (iii) are correct statements but not (ii).
D. (ii) and, (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Learning Objective: 02-02 Display a frequency table using a bar or pie chart.*
*Topic: 02-02 Constructing A Frequency Table*
*Topic: 02-05 Bar Charts*



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3. (i) Pie charts are useful for showing the percent that various components compose of the total.
(ii) Simple bar charts may be constructed either horizontally or vertically.
(iii) A bar chart is a graphic representation of a frequency table.
**A.** (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
C. (i) and, (iii) are correct statements but not (ii).
D. (ii) and, (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-02 Display a frequency table using a bar or pie chart.*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-05 Bar Charts*
*Topic: 02-06 Pie Charts*

4. (i) Bar charts are useful for showing the percent that various components compose of the total.
(ii) Simple bar charts may be constructed either horizontally or vertically.
(iii) A bar chart is a graphic representation of a frequency table.
A. (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
C. (i) and, (iii) are correct statements but not (ii).
**D.** (ii) and, (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-02 Display a frequency table using a bar or pie chart.*
*Topic: 02-05 Bar Charts*



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5. (i) Bar charts are useful for showing the percent that various components compose of the total.
(ii) Simple bar charts may be constructed either horizontally or vertically.
(iii) A frequency polygon is ideal for showing the trend or sales of income over time.
A. (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
C. (i) and, (iii) are correct statements but not (ii).
**D.** (ii) and, (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-02 Display a frequency table using a bar or pie chart.*
*Learning Objective: 02-04 Display a frequency distribution using a histogram or frequency polygon.*
*Topic: 02-05 Bar Charts*
*Topic: 02-13 Histogram*

6. Using the frequency table below, determine the relative frequencies for Apartment and Townhouse listings.

| Type | Number Of Listings |
|---|---|
| Apartment | 58 |
| House | 26 |
| Townhouse | 14 |
| | 98 |

A. 5000 and.5000
B. 5000 and.2653
C. 2653 and.1429
D. 1429 and.2495
**E.** 5918 and.1429

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-10 Relative Frequency Distribution*



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7. Quinn's Café serves ice cream. She asks 100 of her regular customers to take a taste test and pick the flavour they like the best. The results are shown in the following table.

| **Flavour** | **Number** |
|---|---|
| Vanilla | 40 |
| Green tea | 25 |
| Lemon | 20 |
| Coffee | 15 |
| Total | 100 |

Is the data quantitative or qualitative? What is the name of the table shown?
A. quantitative, simple table
B. quantitative, frequency table
**C.** qualitative, frequency table
D. qualitative, cumulative frequency distribution
E. quantitative, bar chart

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Topic: 02-02 Constructing A Frequency Table*

8. When data is collected using a qualitative, nominal variable, i.e., male or female, what is true about a frequency distribution that summarizes the data?
A. Upper and lower class limits must be calculated.
B. Class midpoints can be computed.
**C.** Number of classes corresponds to number of the variable's values.
D. The "2 to the k rule" can be applied.

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Topic: 02-02 Constructing A Frequency Table*



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9. A student was interested in the cigarette smoking habits of college students and collected data from an unbiased random sample of students. The data is summarized in the following table:

| | |
|---|---|
| Male:50 | Female:75 |
| Males who smoke: 20 | Females who smoke: 25 |
| Males who do not smoke: 30 | Females who do not smoke: 50 |

Why is the table NOT a frequency table?
A. The number of males does not equal the sum of males that smoke and do not smoke.
**B.** The classes are not mutually exclusive.
C. There are too many classes.
D. Class limits cannot be computed

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Topic: 02-02 Constructing A Frequency Table*

10. A group of 100 students were surveyed about their interest in a new International Studies program. The survey asked students about their interest in the program in terms of high, medium, or low. 30 students responded high interest; 50 students responded medium interest; 20 students responded low interest. What is the relative frequency of students with medium interest?
A. 30%
**B.** 50%
C. 20%
D. Cannot be determined.

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Topic: 02-03 Relative Class Frequencies*



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11. Which of the following would be most helpful if you wished to construct a pie chart?
A. a frequency distribution
**B.** a relative frequency table
C. a cumulative frequency distribution
D. an ogive
E. a clustered bar chart

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-02 Display a frequency table using a bar or pie chart.*
*Topic: 02-06 Pie Charts*

12. (i) A frequency distribution is grouping of data into classes showing the number of observations in each class.
(ii) The midpoint of a class, which is also called a class mark, is halfway between the lower and upper limits.
(iii) A class interval, which is the width of a class, can be determined by subtracting the lower limit of a class from the lower limit of the next higher class.
**A.** (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
C. (i) and, (iii) are correct statements but not (ii).
D. (ii) and, (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-04 Display a frequency distribution using a histogram or frequency polygon.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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13. (i) A frequency distribution is grouping of data into classes showing the number of observations in each class.
(ii) In constructing a frequency distribution, you should try to have open-ended classes such as "Under $100" and "$1,000 and over".
(iii) A cumulative frequency distribution is used when we want to determine how many observations lie above or below certain values.
A. (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
**C.** (i) and, (iii) are correct statements but not (ii).
D. (ii) and, (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Learning Objective: 02-04 Display a frequency distribution using a histogram or frequency polygon.*
*Learning Objective: 02-05 Construct and interpret a cumulative frequency distribution.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*
*Topic: 02-16 Cumulative Frequency Distribution*

14. Monthly commissions of first-year insurance brokers are $1,270, $1,310, $1,680, $1,380, $1,410, $1,570, $1,180 and $1,420. These figures are referred to as:
A. histogram.
**B.** raw data.
C. frequency distribution.
D. frequency polygon.

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-02 Constructing A Frequency Table*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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15. The monthly incomes of a small sample of computer operators are $1,950, $1,775, $2,060, $1,840, $1,795, $1,890, $1,925 and $1,810. What are these ungrouped numbers called?
A. Histogram
B. Class limits
C. Class frequencies
**D.** Raw data

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-02 Constructing A Frequency Table*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

16. A group of 100 students were surveyed about their interest in a new International Studies program. The survey asked students about their interest in the program in terms of high, medium, or low. 30 students responded high interest; 50 students responded medium interest; 20 students responded low interest. What is the relative frequency of students with high interest?
**A.** 30%
B. 50%
C. 20%
D. Cannot be determined.

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Topic: 02-03 Relative Class Frequencies*

17. When a class interval is expressed as: 100 to under 200
A. Observations with values of 100 are excluded from the class frequency.
B. Observations with values of 200 are included in the class frequency.
**C.** Observations with values of 200 are excluded from the class frequency.
D. The class interval is 99.

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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18. What is the following table called?

| Ages | Number of Ages |
|---|---|
| 20 to under 30 | 16 |
| 30 to under 40 | 25 |
| 40 to under 50 | 51 |
| 50 to under 60 | 80 |
| 60 to under 70 | 20 |
| 70 to under 80 | 8 |

A. Histogram
B. Frequency polygon
C. Cumulative frequency distribution
**D.** Frequency distribution

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-02 Constructing A Frequency Table*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

19. A group of 100 students were surveyed about their interest in a new International Studies program. The survey asked students about their interest in the program in terms of high, medium, or low. 30 students responded high interest; 50 students responded medium interest; 20 students responded low interest. What is the relative frequency of students with low interest?
A. 30%
B. 50%
**C.** 20%
D. Cannot be determined.

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Topic: 02-03 Relative Class Frequencies*



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20. The monthly salaries of a sample of 100 employees were rounded to the nearest ten dollars. They ranged from a low of $1,040 to a high of $1,720. If we want to condense the data into seven classes, what is the most convenient class interval?
A. $50
**B.** $100
C. $150
D. $200

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

21. For the following distribution of heights, what are the limits for the class with the greatest frequency?

| **Heights** | 60” to under 65” | 65” to under 70” | 70” to under 75” |
|---|---|---|---|
| **Number** | 10 | 70 | 20 |

A. 64 and 70
B. 65 and 69
**C.** 65 and 70
D. 69.5 and 74.5

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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22. In a frequency distribution, what is the number of observations in a class called?
A. Class midpoint
B. Class interval
C. Class array
**D.** Class frequency

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

23. A sample distribution of hourly earnings in Paul's Cookie Factory is:

| **Hourly Earnings** | $6 to under $9 | $9 to under $12 | $12 to under $15 |
|---|---|---|---|
| **Numbers** | 16 | 42 | 10 |

The limits of the class with the smallest frequency are:
A. $6.00 and $9.00
B. $12.00 and $14.00
C. $11.75 and $14.25
**D.** $12.00 and $15.00

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
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24. Why are unequal class intervals sometimes used in a frequency distribution?
**A.** To avoid a large number of empty classes
B. For the sake of variety in presenting the data
C. To make the class frequencies smaller
D. To avoid the need for midpoints

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

25. Consider the following relative frequency distribution:

| Class Interval | Relative Frequency |
|---|---|
| 0 to under 10 | 0.2 |
| 10 to under 20 | 0.3 |
| 20 to under 30 | 0.45 |
| 30 to under 40 | 0.05 |

If there are 2,000 numbers in the data set, how many of the values are less than 30?
A. 900
B. 90
**C.** 1900
D. 100

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-10 Relative Frequency Distribution*



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26. Refer to the following price of jeans are recorded to the nearest dollar:
The first two class midpoints are $62.50 and $65.50.
What is the class interval?
A. $1.00
B. $2.00
C. $2.50
**D.** $3.00

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

27. Refer to the following price of jeans are recorded to the nearest dollar:
The first two class midpoints are $62.50 and $65.50.
What are the class limits for the lowest class?
**A.** $61 and up to $64
B. $62 and up to $64
C. $62 and $65
D. $62 and $63

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

28. Refer to the following price of jeans are recorded to the nearest dollar:
The first two class midpoints are $62.50 and $65.50.
What are the class limits for the third class?
A. $64 and $67
B. $67 and $69
**C.** $67 and $70
D. $66 and $68

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
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29. Refer to the following ages (rounded to the nearest whole year) of employees at a large company that were grouped into a distribution with class limits:
20 up to 30
30 up to 40
40 up to 50
50 up to 60
60 up to 70

What is the class interval and the midpoint of the first class?
A. 20 and 25
B. 20 and 24.5
**C.** 10 and 25
D. 10 and 24.5

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

30. What is the class midpoint for the $45 up to $55 class?

| Cost of Textbooks | Number |
|---:|---:|
| $25 up to $35 | 2 |
| 35 up to 45 | 5 |
| 45 up to 55 | 7 |
| 55 up to 65 | 20 |
| 65 up to 75 | 16 |

A. 49
B. 49.5
**C.** 50
D. 50.5

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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31. What are the class limits for the $55 up to $65 class?

| Cost of Textbooks | Number |
|---:|---:|
| $25 up to $35 | 2 |
| 35 up to 45 | 5 |
| 45 up to 55 | 7 |
| 55 up to 65 | 20 |
| 65 up to 75 | 16 |

A. 55 and 64
B. 54 and 64
**C.** 55 and up to 65
D. 55 and 64.5

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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32. The following class intervals for a frequency distribution were developed to provide information regarding the starting salaries for students graduating from a particular school:

| Salary ($1,000s) | Number of Graduates |
|---|---|
| 18-under 21 | - |
| 21-under 25 | - |
| 24-under 27 | - |
| 29-under 30 | - |

Before data was collected, someone questioned the validity of this arrangement. Which of the following represents a problem with this set of intervals?
A. there are too many intervals
B. the class widths are too small
**C.** some numbers between 18,000 and 30,000 would fall into two different intervals
D. the first and the second interval overlap

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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33. The following class intervals for a frequency distribution were developed to provide information regarding the starting salaries for students graduating from a particular school:

| Salary ($1,000s) | Number of Graduates |
|---|---|
| 18-under 21 | - |
| 21-under 25 | - |
| 24-under 27 | - |
| 29-under 30 | - |

Before data was collected, someone questioned the validity of this arrangement. Which of the following represents a problem with this set of intervals?
A. there are too many intervals
B. the class widths are too small
C. some numbers between 18,000 and 30,000 would not fall into any of these intervals
D. the first and the second intervals overlap
**E.** the second and third intervals overlap

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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34. The head of the statistics department wants to determine the number of mistake made by students in their first online assignment. She gathers information from her classes of the past year.

| Errors Per Assignment | Number of Students |
|---|---|
| 0 to under 2 | 40 |
| 2 to under 4 | 50 |
| 4 to under 6 | 30 |
| 6 to under 8 | 10 |
| 8 to under 10 | 20 |

The approximate range (distance from the minimum value in the raw data up to the maximum value) of the data is _____.
A. 150
B. 40
**C.** 10
D. 2

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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35. **Refer to the following distribution of commissions:**

| Monthly commissions | Class Frequencies |
|---|---|
| $600 to under $800 | 3 |
| 800 to under 1,000 | 7 |
| 1,000 to under 1,200 | 11 |
| 1,200 to under 1,400 | 22 |
| 1,400 to under 1,600 | 40 |
| 1,600 to under 1,800 | 24 |
| 1,800 to under 2,000 | 9 |
| 2,000 to under 2,200 | 4 |

What is the relative frequency for those salespersons that earn between $1,600 and $1,799?
A. 2%
B. 2.4%
**C.** 20%
D. 24%

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-10 Relative Frequency Distribution*



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36. **Refer to the following distribution of commissions:**

| Monthly commissions | Class Frequencies |
|---:|---:|
| $600 to under $800 | 3 |
| 800 to under 1,000 | 7 |
| 1,000 to under 1,200 | 11 |
| 1,200 to under 1,400 | 22 |
| 1,400 to under 1,600 | 40 |
| 1,600 to under 1,800 | 24 |
| 1,800 to under 2,000 | 9 |
| 2,000 to under 2,200 | 4 |

The first plot for a cumulative greater than frequency distribution should be:
A. $X = 0, Y = 600$.
B. $X = 600, Y = 3$.
C. $X = 3, Y = 600$.
**D.** $X = 600, Y = 120$.

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-05 Construct and interpret a cumulative frequency distribution.*
*Topic: 02-16 Cumulative Frequency Distribution*



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37. **Refer to the following distribution of commissions:**

| Monthly commissions | Class Frequencies |
|---|---|
| $600 to under $800 | 3 |
| 800 to under 1,000 | 7 |
| 1,000 to under 1,200 | 11 |
| 1,200 to under 1,400 | 22 |
| 1,400 to under 1,600 | 40 |
| 1,600 to under 1,800 | 24 |
| 1,800 to under 2,000 | 9 |
| 2,000 to under 2,200 | 4 |

What is the relative frequency of those salespersons that earn more than $1,599?
A. 25.5%
B. 27.5%
C. 29.5%
**D.** 30.8%

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-10 Relative Frequency Distribution*



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38. **Refer to the following distribution of commissions:**

| Monthly commissions | Class Frequencies |
|---|---|
| $600 to under $800 | 3 |
| 800 to under 1,000 | 7 |
| 1,000 to under 1,200 | 11 |
| 1,200 to under 1,400 | 22 |
| 1,400 to under 1,600 | 40 |
| 1,600 to under 1,800 | 24 |
| 1,800 to under 2,000 | 9 |
| 2,000 to under 2,200 | 4 |

What is the relative frequency for those salespersons that earn between $1,500 and $1,800?
A. 2%
B. 2.4%
C. 20%
D. 24%
**E.** Unable to determine without approximation

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-10 Relative Frequency Distribution*



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39. (i) Simple bar charts may be constructed either horizontally or vertically.
(ii) A frequency polygon is a very useful graphic technique when comparing two or more distributions
(iii) A cumulative frequency distribution is used when we want to determine how many observations lie above or below certain values.
**A.** (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
C. (i) and, (iii) are correct statements but not (ii).
D. (ii) and, (iii) are correct statements but not (i).
E. (i), (ii), and (iii) are all false statements.

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-02 Display a frequency table using a bar or pie chart.*
*Learning Objective: 02-04 Display a frequency distribution using a histogram or frequency polygon.*
*Learning Objective: 02-05 Construct and interpret a cumulative frequency distribution.*
*Topic: 02-05 Bar Charts*
*Topic: 02-12 Graphic Presentation Of A Frequency Distribution*
*Topic: 02-14 Frequency Polygon*
*Topic: 02-16 Cumulative Frequency Distribution*

40. One rule that must always be followed in constructing frequency distributions is that _____.
A. the number of classes must be less than 10
**B.** each data point can only fall into one class
C. the width of each class is equal to the range
D. the number of intervals must be an odd number
E. the class intervals must overlap

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-02 Display a frequency table using a bar or pie chart.*
*Learning Objective: 02-04 Display a frequency distribution using a histogram or frequency polygon.*
*Topic: 02-04 Graphic Presentation of Qualitative Data*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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41. **Refer to the following chart showing a distribution of exporting firms:**

| Exports ($ millions) | Number of Firms |
|---:|---:|
| $2 to under $5 | 6 |
| 5 to under 8 | 13 |
| 8 to under 11 | 20 |
| 11 to under 14 | 10 |
| 14 to under 17 | 3 |

For the distribution above, what is the midpoint of the class with the greatest frequency?
A. $6 million
**B.** $9.5 million
C. $15.5 million
D. The midpoint cannot be determined

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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42. **Refer to the following chart showing a distribution of exporting firms:**

| Exports ($ millions) | Number of Firms |
|---|---|
| $2 to under $5 | 6 |
| 5 to under 8 | 13 |
| 8 to under 11 | 20 |
| 11 to under 14 | 10 |
| 14 to under 17 | 3 |

What is the class interval? _____
A. 2
**B.** 3
C. 3.5
D. 4

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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43. **Refer to the following chart showing a distribution of exporting firms:**

| Exports ($ millions) | Number of Firms |
|---|---|
| $2 to under $5 | 6 |
| 5 to under 8 | 13 |
| 8 to under 11 | 20 |
| 11 to under 14 | 10 |
| 14 to under 17 | 3 |

How many firms export less than $14 million in product?
A. 3
B. 60
C. 50
**D.** 49

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Learning Objective: 02-05 Construct and interpret a cumulative frequency distribution.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*
*Topic: 02-16 Cumulative Frequency Distribution*



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44. **Refer to the following chart showing a distribution of exporting firms:**

| Exports ($ millions) | Number of Firms |
|---:|---:|
| $2 to under $5 | 6 |
| 5 to under 8 | 13 |
| 8 to under 11 | 20 |
| 11 to under 14 | 10 |
| 14 to under 17 | 3 |

What percentage of the firms export less than $14 million in product?
A. 3%
B. 6%
C. 49%
**D.** 94%
E. 75%

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-05 Construct and interpret a cumulative frequency distribution.*
*Topic: 02-16 Cumulative Frequency Distribution*



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45. **Refer to the following distribution of commissions:**

| Monthly commissions | Class frequencies |
|---:|---:|
| $600 to under $800 | 3 |
| 800 to under 1,000 | 7 |
| 1,000 to under 1,200 | 11 |
| 1,200 to under 1,400 | 22 |
| 1,400 to under 1,600 | 40 |
| 1,600 to under 1,800 | 24 |
| 1,800 to under 2,000 | 9 |
| 2,000 to under 2,200 | 4 |

What is the class interval for the table of commissions above?
**A.** $200
B. $3
C. $400
D. $1600

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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46. **Refer to the following distribution of commissions:**

| Monthly commissions | Class frequencies |
|---|---|
| $600 to under $800 | 3 |
| 800 to under 1,000 | 7 |
| 1,000 to under 1,200 | 11 |
| 1,200 to under 1,400 | 22 |
| 1,400 to under 1,600 | 40 |
| 1,600 to under 1,800 | 24 |
| 1,800 to under 2,000 | 9 |
| 2,000 to under 2,200 | 4 |

What is the class midpoint for the class with the greatest frequency?
A. $1400
**B.** $1500
C. $1600
D. $1700

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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47. **Refer to the following distribution of commissions:**

| Monthly commissions | Class Frequencies |
|---|---|
| $600 to under $800 | 3 |
| 800 to under 1,000 | 7 |
| 1,000 to under 1,200 | 11 |
| 1,200 to under 1,400 | 22 |
| 1,400 to under 1,600 | 40 |
| 1,600 to under 1,800 | 24 |
| 1,800 to under 2,000 | 9 |
| 2,000 to under 2,200 | 4 |

What are the class limits for the class with the smallest number of frequencies?
**A.** 600 and 800
B. 800 and1000
C. 2000 and 2200
D. 599 and 799

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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48. **Refer to the following distribution of ages:**

| Ages | Number |
|---|---|
| 40 up to 50 | 10 |
| 50 up to 60 | 28 |
| 60 up to 70 | 12 |

For the distribution of ages above, what is the relative class frequency for the lowest class?
A. 50%
B. 18%
**C.** 20%
D. 10%

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-10 Relative Frequency Distribution*



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49. **Refer to the following distribution of ages:**

| Ages | Number |
|---|---|
| 40 up to 50 | 10 |
| 50 up to 60 | 28 |
| 60 up to 70 | 12 |

What is the class interval?
A. 9
**B.** 10
C. 10.5
D. 11

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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50. **Refer to the following distribution of ages:**

| Ages | Number |
|---|---|
| 40 up to 50 | 10 |
| 50 up to 60 | 28 |
| 60 up to 70 | 12 |

What is the class midpoint of the highest class?
A. 54
B. 55
C. 64
**D.** 65

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-04 Display a frequency distribution using a histogram or frequency polygon.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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51. Refer to the following cumulative frequency distribution on days absent during a calendar year by employees of a manufacturing company:

| Days Absent | Cumulative Number of Employees |
|---|---|
| 0 to under 3 | 60 |
| 3 to under 6 | 31 |
| 6 to under 9 | 14 |
| 9 to under 12 | 6 |
| 12 to under 15 | 2 |

How many employees were absent between 3 to under 6 days?
**A.** 31
B. 29
C. 14
D. 2
E. 17

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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52. Refer to the following cumulative frequency distribution on days absent during a calendar year by employees of a manufacturing company:

| Days Absent | Cumulative Number of Employees |
|---|---|
| 0 to under 3 | 60 |
| 3 to under 6 | 31 |
| 6 to under 9 | 14 |
| 9 to under 12 | 6 |
| 12 to under 15 | 2 |

How many employees were absent fewer than six days?
A. 60
B. 31
**C.** 91
D. 46

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*
*Topic: 02-16 Cumulative Frequency Distribution*



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53. Refer to the following cumulative frequency distribution on days absent during a calendar year by employees of a manufacturing company:

| Days Absent | Cumulative Number of Employees |
|---|---|
| 0 to under 3 | 60 |
| 3 to under 6 | 31 |
| 6 to under 9 | 14 |
| 9 to under 12 | 6 |
| 12 to under 15 | 2 |

How many employees were absent six or more days?
A. 8
B. 4
**C.** 22
D. 31

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Learning Objective: 02-05 Construct and interpret a cumulative frequency distribution.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*
*Topic: 02-16 Cumulative Frequency Distribution*

54. Refer to the following cumulative frequency distribution on days absent during a calendar year by employees of a manufacturing company:

| Days Absent | Cumulative Number of Employees |
|---|---|
| 0 to under 3 | 60 |
| 3 to under 6 | 31 |
| 6 to under 9 | 14 |
| 9 to under 12 | 6 |
| 12 to under 15 | 2 |



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How many employees were absent from 6 to under 12 days?
**A.** 20
B. 8
C. 12
D. 17

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Learning Objective: 02-05 Construct and interpret a cumulative frequency distribution.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*
*Topic: 02-16 Cumulative Frequency Distribution*

55. (i) Pie charts are useful for showing the percent that various components compose of the total.
(ii) Simple bar charts may be constructed either horizontally or vertically.
(iii) A Frequency Polygon is ideal for showing the trend or sales of income over time.
**A.** (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
C. (i) and, (iii) are correct statements but not (ii).
D. (ii) and, (iii) are correct statements but not (i).
E. (i), (ii) and (iii) are all false statements.

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-02 Display a frequency table using a bar or pie chart.*
*Learning Objective: 02-04 Display a frequency distribution using a histogram or frequency polygon.*
*Topic: 02-05 Bar Charts*
*Topic: 02-06 Pie Charts*
*Topic: 02-14 Frequency Polygon*



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56. (i) In constructing a frequency distribution, you should try to have open-ended classes such as "Under $100" and "$1,000 and over".
(ii) To convert a frequency distribution to a relative frequency distribution, divide each class frequency by the sum of the class frequencies.
(iii) When constructing a frequency distribution, try to include overlapping stated class limits, such as 100 up to 201, 200 up to 301, and 300 up to 401.
A. (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
C. (i) and, (iii) are correct statements but not (ii).
**D.** (ii) is a correct statement but not (i) or (iii).
E. (i), (ii) and (iii) are all false statements.

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-02 Constructing A Frequency Table*
*Topic: 02-03 Relative Class Frequencies*
*Topic: 02-10 Relative Frequency Distribution*

57. What is the relative class frequency for the $25 up to $35 class?

| Cost of Textbooks | Number |
|---|---|
| $25 up to $35 | 2 |
| 35 up to 45 | 5 |
| 45 up to 55 | 7 |
| 55 up to 65 | 20 |
| 65 up to 75 | 16 |

A. 2%
**B.** 4%
C. 5%
D. 10%

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Topic: 02-03 Relative Class Frequencies*



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58. The relative frequency for a class is computed as
A. Class width divided by class interval.
B. Class midpoint divided by the class frequency.
C. Class frequency divided by the class interval.
**D.** Class frequency divided by the total frequency.

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Topic: 02-03 Relative Class Frequencies*

59. When a class interval is expressed as: 100 to under 200
(i) Observations with values of 100 are included from the class frequency.
(ii) Observations with values of 200 are included in the class frequency.
(iii) Observations with values of 200 are excluded from the class frequency.
A. (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
**C.** (i) and, (iii) are correct statements but not (ii).
D. (ii) is a correct statement but not (i) or (iii).

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

60. The age distribution of a sample of the part-time employees at Lloyd's Fast Food Emporium is:

| Ages | Cumulative Number |
|---|---|
| 18 up to 23 | 6 |
| 23 up to 28 | 19 |
| 28 up to 33 | 52 |
| 33 up to 38 | 61 |
| 38 up to 43 | 65 |



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What type of chart has the data been organized to draw?
A. Histogram
B. Simple Frequency Polygon
**C.** Cumulative frequency polygon
D. Pie chart
E. Frequency polygon

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-05 Construct and interpret a cumulative frequency distribution.*
*Topic: 02-16 Cumulative Frequency Distribution*

61. In a simple Frequency Polygon, where is time plotted?
**A.** On the *X*-axis
B. On the *Y*-axis
C. On either axis
D. Never plotted

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-14 Frequency Polygon*

62. The grades on a statistics exam for a sample of students are as follows:

| Stem | Leaf |
|---:|---:|
| 3 | 68 |
| 4 | 1278 |
| 5 | 156789 |
| 6 | 122457888 |
| 7 | 1156799 |
| 8 | 1246 |
| 9 | 14 |



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If A + = 90%-100%
A = 80%-89%
B+ = 75%-79%
B = 70%-74%
C+ = 65%-69%
C = 60%-64%
D+ = 55%-59%
D = 50%-54%
F = 0-49%

What is the most common letter grade earned?
A. A (80%-89%)
B. B (70%-74%)
C. C (60%-64%)
D. D (50%-54%)
**E.** F (0-49%)

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*

63. The grades on a statistics exam for a sample of students are as follows:

| Stem | Leaf |
|---:|---:|
| 3 | 68 |
| 4 | 1278 |
| 5 | 156789 |
| 6 | 122457888 |
| 7 | 1156799 |
| 8 | 1246 |
| 9 | 14 |



Basic Statistics for Business and Economics (Canadian) 6th edition Lind Test Bank

If A = 80%-100%
B = 70%-79%
C = 60%-69%
D = 50%-59%
F =0-49%

What is the most common letter grade earned?
A. A (80%-100%)
B. B (70%-79%)
**C.** C (60%-69%)
D. D (50%-59%)
E. F (0-49%)

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*

64. The grades on a statistics exam for a sample of students are as follows:

| Stem | Leaf |
|---|---|
| 4 | 014 |
| 5 | 08 |
| 6 | 88999 |
| 7 | 68 |
| 8 | 0011136 |
| 9 | 2 |



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If A+ = 90%-100%
A = 80%-89%
B+ = 75%-79%
B = 70%-74%
C+ = 65%-69%
C = 60%-64%
D+ = 55%-59%
D = 50%-54%
F = 0-49%

What is the most common letter grade earned?
**A.** A (80%-89%)
B. B (70%-74%)
C. C (60%-64%)
D. D (50%-54%)
E. F (0-49%)

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*

65. (i) For a stem-and-leaf display, the leaf for the value 98 is 9.
(ii) There is some loss of information when raw data is tallied into a stem-and-leaf display.
(iii) A cumulative frequency distribution is used when we want to determine how many observations lie above or below certain values.
A. (i), (ii) and (iii) are all correct statements.
B. (i) and, (ii) are correct statements but not (iii).
C. (i) and, (iii) are correct statements but not (ii).
**D.** (iii) is a correct statement but not (i) or (ii)
E. (i), (ii) and (iii) are all false statements.

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-05 Construct and interpret a cumulative frequency distribution.*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-16 Cumulative Frequency Distribution*
*Topic: 02-18 Stem-and-Leaf Displays*



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66. The grades on a statistics exam for a sample of students are as follows:

| Stem | Leaf |
|---|---|
| 3 | 68 |
| 4 | 1278 |
| 5 | 156789 |
| 6 | 1224578889 |
| 7 | 1156799 |
| 8 | 1246 |
| 9 | 14 |

How many students wrote this test?
A. 36
**B.** 35
C. 38
D. 7
E. 43

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*



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67. The grades on a statistics exam for a sample of students are as follows:

| Stem | Leaf |
|---|---|
| 3 | 68 |
| 4 | 1278 |
| 5 | 156789 |
| 6 | 1224578889 |
| 7 | 1156799 |
| 8 | 1246 |
| 9 | 14 |

If A + = 90%-100%
A = 80%-89%
B+ = 75%-79%
B = 70%-74%
C+ = 65%-69%
C = 60%-64%
D = 55%-59%
F = 0%-54%

How many student earned a letter grade of C?
A. 1
B. 3
**C.** 4
D. 5
E. 10

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*



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68. A row of a stem-and-leaf chart appears as follows: 3 | 0 1 3 5 7 9. Assume that the data is rounded to the nearest unit.
A. The frequency of the class is seven.
B. The minimum value in the class is 0.
**C.** The maximum value in the class could be 39.
D. The class interval is 5.

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*

69. (i). The stem in a stem-and-leaf display is the leading digit
(ii) There is no loss of information when raw data is tallied into a stem-and-leaf display.
(iii). For a stem-and-leaf display, the leaf for the value 98 is 9
A. (i), (ii) and (iii) are all correct statements.
**B.** (i) and, (ii) are correct statements but not (iii).
C. (i) and, (iii) are correct statements but not (ii).
D. (ii) and (iii) are correct statements but not (i).
E. (i), (ii) and (iii) are all false statements.

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*



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70. Given the following stem and leaf plot, determine the smallest value in the data set.

| Frequency | Stem | Leaf |
|---|---|---|
| 2 | 1 | 9 9 |
| 3 | 2 | 6 7 7 |
| 9 | 3 | 0 2 2 2 2 5 7 8 9 9 |
| 7 | 4 | 0 6 6 7 7 8 8 |
| 12 | 5 | 2 2 3 4 4 4 5 5 6 7 8 8 |
| 9 | 6 | 0 0 0 0 1 1 3 5 7 |
| 0 | 7 | |
| 2 | 8 | 17 |
| 45 | | |

A. 1
**B.** 19
C. 199
D. 45
E. 2

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*



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71. Given the following stem and leaf plot, determine the largest value in the data set.

| Frequency | Stem | Leaf |
|---|---|---|
| 2 | 1 | 9 9 |
| 3 | 2 | 6 7 7 |
| 9 | 3 | 0 2 2 2 2 5 7 8 9 9 |
| 7 | 4 | 0 6 6 7 7 8 8 |
| 12 | 5 | 2 2 3 4 4 4 5 5 6 7 8 8 |
| 9 | 6 | 0 0 0 0 1 1 3 5 7 |
| 0 | 7 | |
| 2 | 8 | 17 |
| 45 | | |

**A.** 87
B. 819
C. 28
D. 17
E. 817

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*



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72. The following represent the ages of students in a class:

19, 23, 21, 19, 19, 20, 22, 31, 21, 20
If a stem and leaf plot were to be developed from this, how many stems would there be?
A. 1
B. 2
**C.** 3
D. 4
E. 10

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*

73. The following represent the ages of students in a class:

19, 23, 21, 19, 19, 20, 22, 31, 21, 20
If a stem and leaf plot were to be developed from this, how many leaves would there be off the second stem?
A. 11
B. 2
C. 3
D. 4
**E.** 6

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*



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74. Consider the following stem and leaf plot:

| | |
|---|---|
| 0 | 0 3 3 5 7 8 |
| 1 | 1 4 6 |
| 2 | 2 2 2 |
| 3 | 8 9 |
| 4 | 0 |

Suppose that you decided to develop a frequency distribution from this plot.
What would be the lower limit of the first class?
**A.** 0
B. 10
C. 11
D. 1
E. 3

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*

75. In constructing a frequency polygon, the class frequencies are scaled on the _____.
A. X-axis
**B.** Y-axis
C. Z-axis

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-02 Display a frequency table using a bar or pie chart.*
*Topic: 02-05 Bar Charts*



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76. A useful chart or graph to use for illustrating relative frequencies is the _____.
A. bar chart
**B.** pie chart
C. clustered bar chart
D. multiple line polygon

*Accessibility: Keyboard Navigation*
*Difficulty: Easy*
*Learning Objective: 02-02 Display a frequency table using a bar or pie chart.*
*Topic: 02-06 Pie Charts*

77. (i) A table showing the number of observations that have been grouped into each of several classes is called a frequency distribution.
(ii) When classes in a frequency table are constructed so that data will fit into only one category, it is called a relative class frequency.
(iii) The suggested class interval based on number of observations given the data ranges from 100 to 200 with 50 observations is 50.
A. (i), (ii) and (iii) are all correct statements.
B. (i), (ii) and (iii) are all false statements.
C. (i) and (iii) are correct statements but not (ii).
**D.** (i) is a correct statement but not (ii) or (iii).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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78. (i) A table showing the number of observations that have been grouped into each of several classes is called a frequency distribution.
(ii) When classes in a frequency table are constructed so that data will fit into only one category, it is called mutually exclusive.
(iii) The suggested class interval based on number of observations given the data ranges from 100 to 200 with 50 observations is 20
**A.** (i), (ii) and (iii) are all correct statements.
B. (i), (ii) and (iii) are all false statements.
C. (i) and, (iii) are correct statements but not (ii).
D. (ii) and (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

79. (i) A table showing the number of observations that have been grouped into each of several classes is called a frequency distribution.
(ii) When classes in a frequency table are constructed so that data will fit into only one category, it is called mutually exclusive.
(iii) The best means to display data that is based on a trend over a period of time is the polygon.
**A.** (i), (ii) and (iii) are all correct statements.
B. (i), (ii) and (iii) are all false statements.
C. (i) and, (iii) are correct statements but not (ii).
D. (ii) and (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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80. (i) If you are constructing a stem-and-leaf display, the "20" in 20.5 would be the stem.
(ii) An advantage of a stem-and-leaf chart over a histogram is that the identity of each observation is not lost, and that it presents a picture of the distribution.
(iii) An advantage of a stem-and-leaf chart over a histogram is that it presents a picture of the distribution.
**A.** (i), (ii) and (iii) are all correct statements.
B. (i), (ii) and (iii) are all false statements.
C. (i) and, (iii) are correct statements but not (ii).
D. (ii) and (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*

81. (i) If you are constructing a stem-and-leaf display, the "20" in 20.5 would be the stem.
(ii) An advantage of a stem-and-leaf chart over a histogram is that the identity of each observation is not lost, and that it presents a picture of the distribution.
(iii) If you are constructing a stem-and-leaf display, the "20" in 20.5 would be the leaf.
A. (i), (ii) and (iii) are all correct statements.
B. (i), (ii) and (iii) are all false statements.
**C.** (i) and, (ii) are correct statements but not (iii).
D. (ii) and (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*



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82. (i) If you are constructing a stem-and-leaf display, the "20" in 20.5 would be the stem.
(ii) An advantage of a stem-and-leaf chart over a histogram is that the identity of each observation is not lost, and that it presents a picture of the distribution.
(iii) If you are constructing a stem-and-leaf display, the "2" in 20.5 would be the leaf.
A. (i), (ii) and (iii) are all correct statements.
B. (i), (ii) and (iii) are all false statements.
**C.** (i) and (ii) are correct statements but not (iii).
D. (ii) and (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-06 Construct and describe a stem-and-leaf display.*
*Topic: 02-18 Stem-and-Leaf Displays*

83. The following ages (rounded to the nearest whole year) of employees at a large company that were grouped into a distribution with class limits:
20 up to 30
30 up to 40
40 up to 50
50 up to 60
60 up to 70

(i) The class limits for the class 50 up to 60 class are 50 and 58.
(ii) The midpoint for the class 40 up to 50 is 45.
(iii) The class interval is 9.
A. (i), (ii) and (iii) are all correct statements.
B. (i), (ii) and (iii) are all false statements.
**C.** (ii) is correct but not not (i) and (iii).
D. (ii) and (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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84. The following ages (rounded to the nearest whole year) of employees at a large company that were grouped into a distribution with class limits:
20 up to 30
30 up to 40
40 up to 50
50 up to 60
60 up to 70

(i) The class limits for the class 50 up to 60 class are 50 and 58.
(ii) The midpoint for the class 40 up to 50 is 45.
(iii) The class interval is 10.
A. (i), (ii) and (iii) are all correct statements.
B. (i), (ii) and (iii) are all false statements.
C. (i) and (ii) are correct statements but not (iii).
**D.** (ii) and (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

85. The following ages (rounded to the nearest whole year) of employees at a large company that were grouped into a distribution with class limits:
20 up to 30
30 up to 40
40 up to 50
50 up to 60
60 up to 70

(i) The class limits for the class 50 up to 60 class are 50 and60.
(ii) The midpoint for the class 40 up to 50 is 45.
(iii) The class interval is 10.
**A.** (i), (ii) and (iii) are all correct statements.
B. (i), (ii) and (iii) are all false statements.
C. (i) and (ii) are correct statements but not (iii).
D. (ii) and (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*



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86. The following ages (rounded to the nearest whole year) of employees at a large company that were grouped into a distribution with class limits:
20 up to 30
30 up to 40
40 up to 50
50 up to 60
60 up to 70

(i) The class limits for the class 50 up to 60 class are 50 and 58.
(ii) The midpoint for the class 40 up to 50 is 40.
(iii) The class interval is 9.
A. (i), (ii) and (iii) are all correct statements.
**B.** (i), (ii) and (iii) are all false statements.
C. (i) and (iii) are correct statements but not (ii).
D. (ii) and (iii) are correct statements but not (i).

*Accessibility: Keyboard Navigation*
*Difficulty: Hard*
*Learning Objective: 02-03 Summarize quantitative variables with frequency and relative frequency distributions.*
*Topic: 02-08 Constructing Frequency Distributions: Quantitative Data*

87. A student was studying the political party preferences of a university's student population. The survey instrument asked students to identify themselves as a Conservative or NDP. This question is flawed because:
A. Students generally don't know their political preferences.
B. The categories are generally mutually exclusive.
**C.** The categories are not exhaustive.
D. Political preference is a continuous variable.

*Accessibility: Keyboard Navigation*
*Difficulty: Medium*
*Learning Objective: 02-01 Summarize qualitative variables with frequency and relative frequency tables.*
*Topic: 02-02 Constructing A Frequency Table*



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