

Name: _____

Chapter 16 Worksheet #2 and Notes on Histograms and Box and Whisker Plots Algebra, Mrs. Slack-Joles

- 1) Using the data below, complete the frequency table.

DATA: 30, 32, 11, 14, 40, 37, 16, 26, 12, 33, 13, 19, 38, 12, 28, 15, 39, 11, 37, 17, 27, 14, 36

Number	Tally	Frequency
11-15		
16-20		
21-25		
26-30		
31-35		
36-40		

- 2) The test scores for 10 students in Ms. Sampson's homeroom were 61, 67, 81, 83, 87, 88, 89, 90, 98, and 100. Which frequency table is accurate for this set of data?

A)

Interval	Frequency
61-70	2
71-80	2
81-90	8
91-100	10

B)

Interval	Frequency
61-70	2
71-80	0
81-90	6
91-100	2

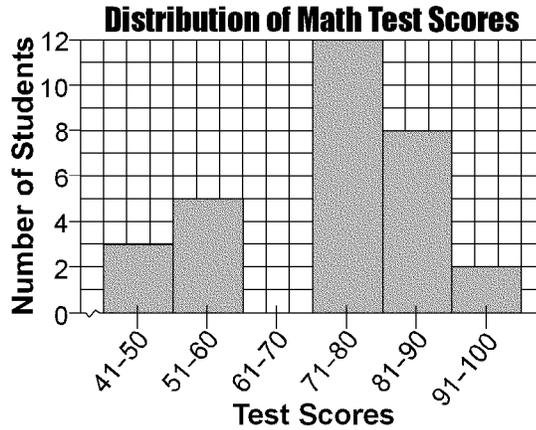
C)

Interval	Frequency
61-70	2
71-80	2
81-90	7
91-100	10

D)

Interval	Frequency
61-70	2
71-80	0
81-90	8
91-100	10

3) The graph below shows the distribution of scores of 30 students on a mathematics test.

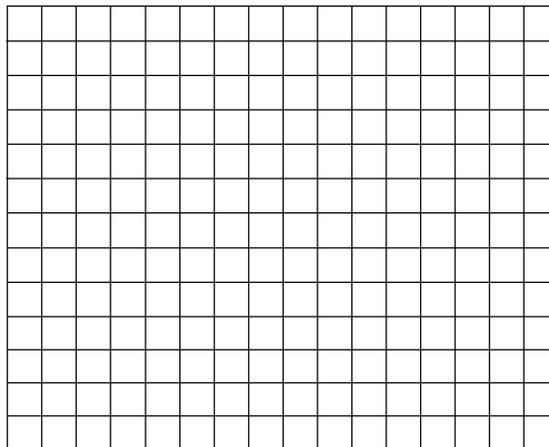


Complete the frequency table below using the data in the frequency histogram shown.

Test Scores	Frequency
91-100	
81-90	
71-80	
61-70	
51-60	
41-50	

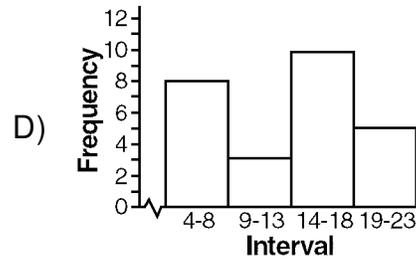
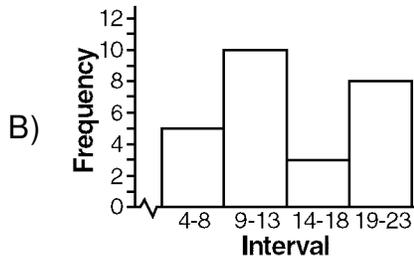
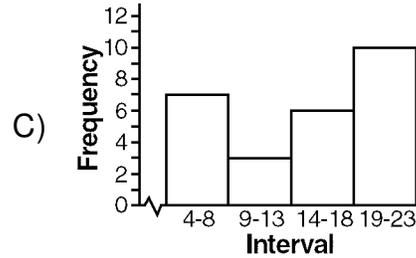
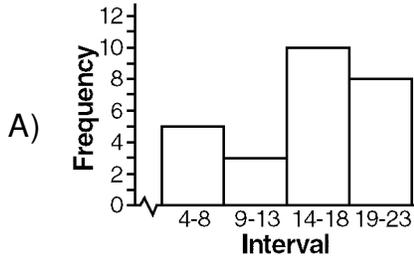
4) The scores on a mathematics test were 70, 55, 61, 80, 85, 72, 65, 40, 74, 68, and 84. Complete the accompanying table, and use the table to construct a frequency histogram for these scores.

Score	Tally	Frequency
40-49		
50-59		
60-69		
70-79		
80-89		



5) Which one of the following histograms represents the data in the table below?

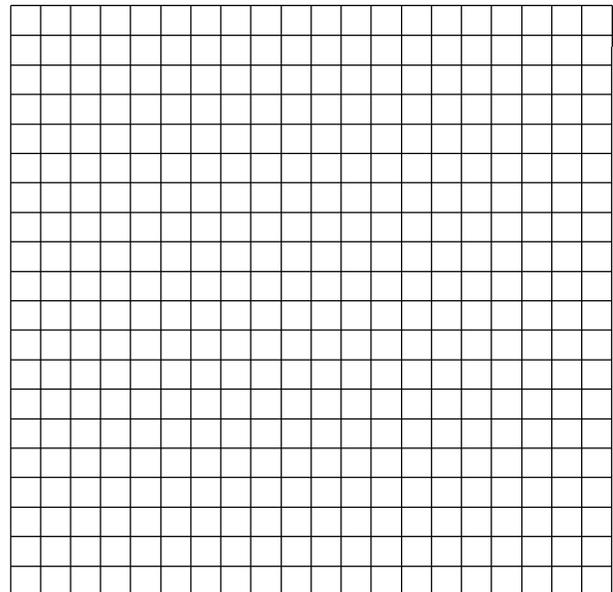
Interval	Frequency
4-8	8
9-13	3
14-18	10
19-23	5



6) The following data consists of the weights, in pounds, of 24 high school students: 195, 206, 100, 98, 150, 210, 195, 106, 195, 108, 180, 212, 104, 195, 100, 216, 99, 206, 116, 142, 100, 135, 98, 160.

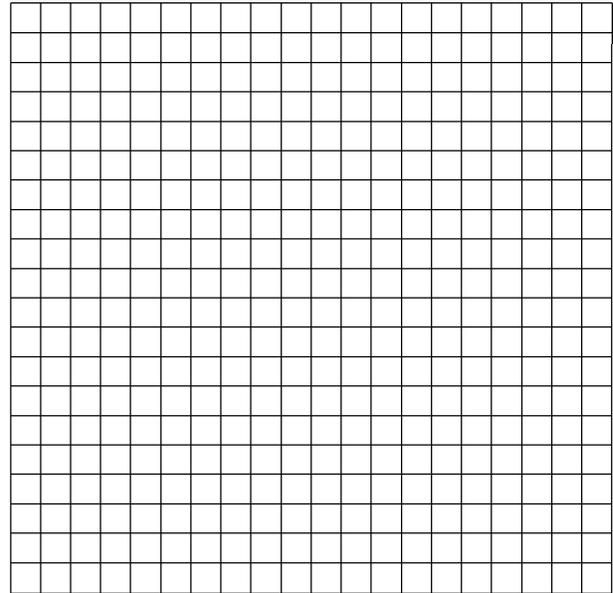
Using this data, complete the accompanying cumulative frequency table and construct a cumulative frequency histogram on the grid below.

Interval	Frequency	Cumulative Frequency
51-100		
101-150		
151-200		
201-250		

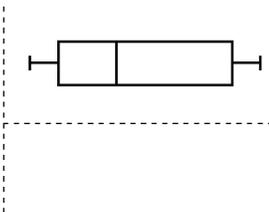


- 7) The accompanying table shows the weights, in pounds, for the students in an algebra class. Using the data, complete the cumulative frequency table and construct a cumulative frequency histogram on the grid below.

Interval	Frequency	Cumulative Frequency
91-100	6	
101-110	3	
111-120	0	
121-130	3	
131-140	4	
141-150	2	
151-160	2	



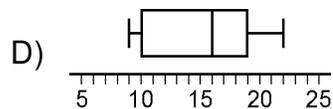
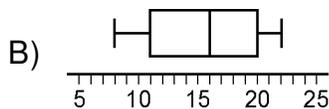
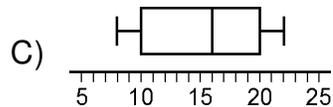
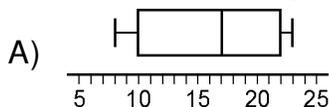
- 8) The accompanying diagram is an example of which type of graph?



- A) bar graph
 B) histogram
 C) box-and-whisker plot
 D) stem-and-leaf plot
- 9) Given the following data:

10, 8, 9, 16, 19, 15, 20, 16, 21, 22, 19

Which of the following is the box-and-whisker graph for this data?

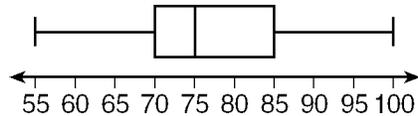


10) Construct a box-and-whisker graph using the following data:

16, 12, 13, 14, 16, 18, 15, 17, 20, 12, 14, 15, 15

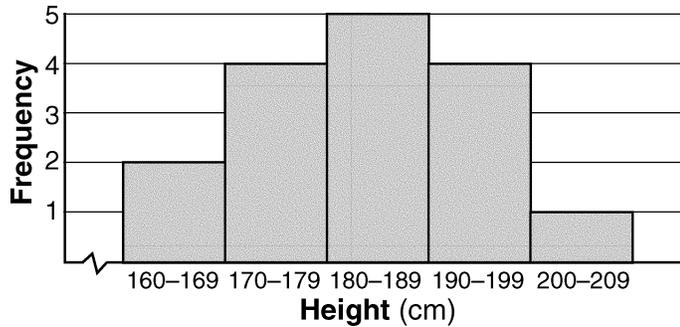
Questions 11 through 14 refer to the following:

The accompanying box-and-whisker plot represents the scores earned on a science test.



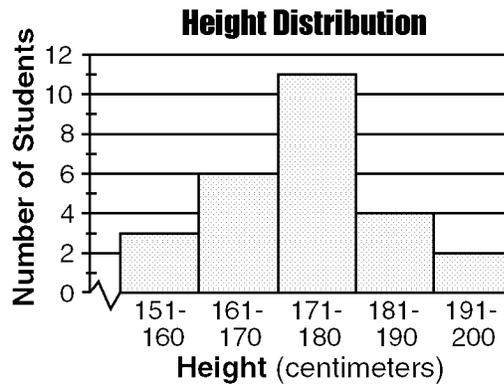
- 11) According to the diagram shown, what is the median score?
 A) 75 B) 70 C) 85 D) 77
- 12) According to the diagram shown, what score represents the first quartile?
 A) 55 B) 70 C) 100 D) 75
- 13) What statement is *not* true about the box and whisker plot shown?
 A) 75 represents the mean score C) 85 represents the 3rd quartile
 B) 100 represents the maximum score D) 55 represents the minimum score
- 14) A score of an 85 on the box-and-whisker plot shown refers to
 A) the third quartile C) the median
 B) the maximum score D) the mean
- 15) (a) Arrange the following data from *least* to *greatest* and find the median.
 20, 25, 24, 17, 18, 19, 21, 27
- (b) Find the median of the upper half of the data. What is this called?
- (c) Find the median of the lower half of the data. What is this called?
- (d) Draw a box-and-whisker graph using the above information.

- 16) The accompanying histogram shows the heights of the students in Kyra's health class.



What is the total number of students in the class?

- A) 15 B) 209 C) 16 D) 5
- 17) The accompanying histogram shows the height distribution for students in a high school mathematics class.



What is the total number of students in the class?

- A) 28 B) 26 C) 49 D) 11
- 18) Using the cumulative frequency table below, how many students received a test score between a 70-79?

Scores on a French Test

Interval	Cumulative Frequency
50-99	30
50-89	24
50-79	12
50-69	12
50-59	2

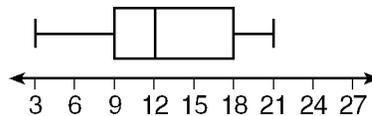
- A) 0 B) 80 C) 12 D) 26

Questions 19 through 21 refer to the following:

The test scores for 20 students in a Spanish class are shown in the frequency table below.

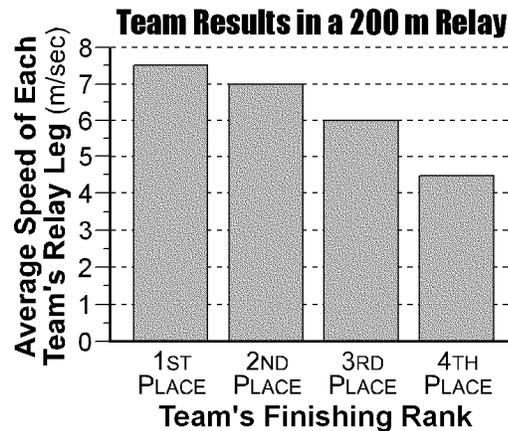
Interval	Frequency
90-99	4
80-89	3
70-79	8
60-69	4
50-59	1

- 19) According to the information shown, how many students received a score greater than a 69?
- 20) The median lies in which interval of the frequency table shown?
- 21) The upper quartile lies in which interval of the frequency table shown?
- 22) Which of the following sets of data values could represent the box-and-whisker plot below?



- A) 3, 10, 11, 13, 21
- B) 3, 6, 9, 12, 15, 18, 21
- C) 3, 9, 10, 12, 16, 18, 21
- D) 3, 9, 10, 11, 13, 15, 18, 21

- 23) The USA Track and Field Committee published the following report illustrating the comparison of lap speed and finishing placement of several top relay teams.



Based on the bar graph above, which of the following conclusions is *most* accurate?

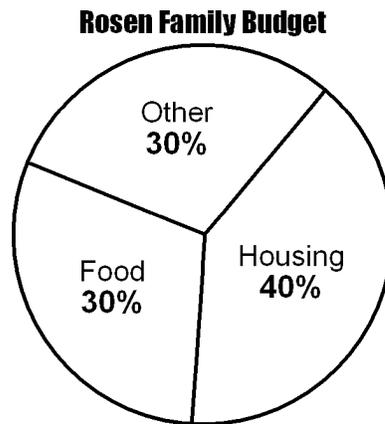
- A) The first-place team was twice as fast as the fourth-place team.
 B) The fastest time for the 200-meter relay is 7 meters per second.
 C) The first-place and second-place teams were closest in time to one another.
 D) Every runner on the first-place team ran faster than the runners on the second-place team.
- 24) A television network wants to pilot a new series in a city with 25,000 residents. They decided to choose a random sample of 1,000 people to determine the best time to run the series. The survey asked participants to state what time of day they watched the most television. The table below shows the results.

Time of Day	Number of People
8 am–noon	162
noon–4 pm	187
4 pm–7 pm	322
7 pm–11 pm	258
11 pm–8 am	71

Based on these results, approximately how many people in the city watch television between 4 pm and 7 pm?

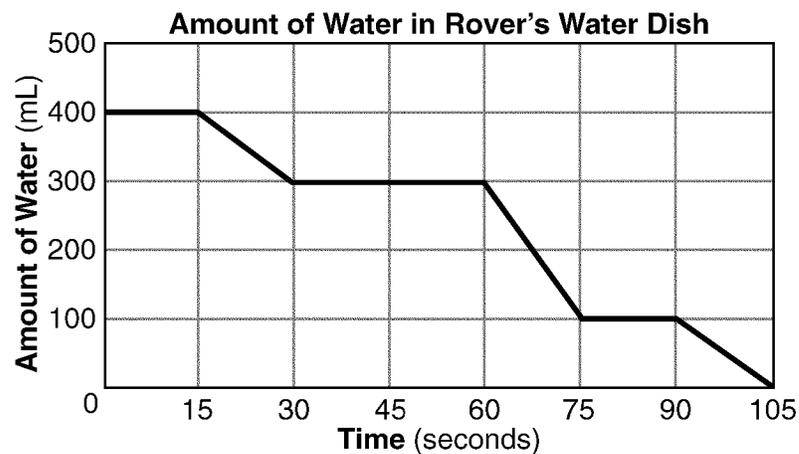
- A) 8,050 people
 B) 1,450 people
 C) 14,500 people
 D) 580 people

- 25) The Statistical Data Bureau published an analysis of incomes and expenditures of 100 average families throughout the United States. The circle graph below represents the Rosen family's monthly budget.



If their total monthly income is \$1,820, how much money do they spend each month on food?

- A) \$546 B) \$728 C) \$606 D) \$182
- 26) The accompanying graph shows the amount of water left in Rover's water dish over a period of time.



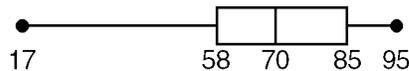
How long did Rover wait from the end of his first drink to the start of his second drink of water?

- A) 60 sec B) 30 sec C) 10 sec D) 75 sec
- 27) Janae's first seven French grades for the year are 91, 87, 80, 99, 85, 78, and 90. What grade is at the 75th percentile?
- A) 90 B) 78 C) 90.5 D) 91

- 28) Terri waitressed 10 days out of the last two weeks. The amount of money she earned each day in tips are \$32, \$58, \$17, \$27, \$69, \$73, \$42, \$38, \$24, and \$52. How much money is at the 50th percentile?
- A) 42 B) 69 C) 38 D) 40

- 29) The median of any set of data always represents the
- A) upper quartile C) mean of the data
B) 50th percentile D) 1st quartile

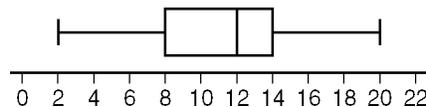
- 30) Ms. Michalson drew a box-and-whisker plot to represent her students' scores on a recent math test.



If Jennifer scored a 85 on the test, explain how her grade compares with the rest of her class.

Questions 31 through 34 refer to the following:

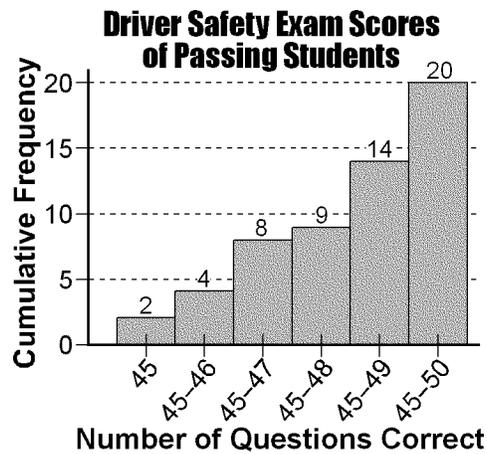
The number of text messages 10 different students sent in 1 day is shown in the box-and-whisker plot below.



- 31) What is the minimum number of text messages sent according to the plot shown?
- A) 0 B) 2 C) 20 D) 8
- 32) What number is at the 50th percentile according to the plot shown?
- A) 12 B) 8 C) 14 D) 10
- 33) According to the plot shown, between what two numbers does half of the data lie?
- A) 10 and 12 B) 8 and 12 C) 8 and 14 D) 2 and 20
- 34) According to the plot shown, how many text messages are at the 75th percentile (upper quartile)?
- A) 15 B) 12 C) 13.5 D) 14

Questions 35 through 37 refer to the following:

In order to pass a driver's safety course, a person must answer at least 45 out of 50 questions correctly. The cumulative histogram below gives the scores of a group of people who passed the exam.



- 35) According to the table shown, how many total people passed the driver's safety exam?
 A) 25 B) 57 C) 50 D) 20
- 36) According to the table shown, how many people answered 49 questions correctly?
 A) 5 B) 9 C) 14 D) 41
- 37) According to the table shown, how many people received a score of 48 or less?
 A) 23 B) 9 C) 11 D) 25