

A.S.5: Frequency Histograms, Bar Graphs and Tables: Construct a histogram, cumulative frequency histogram, and a box-and-whisker plot, given a set of data

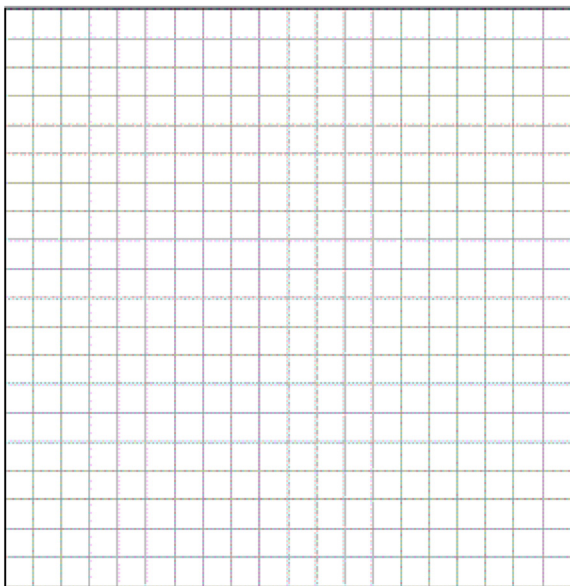
- 1 The Fahrenheit temperature readings on 30 April mornings in Stormville, New York, are shown below.

41°, 58°, 61°, 54°, 49°, 46°, 52°, 58°, 67°, 43°,
 47°, 60°, 52°, 58°, 48°, 44°, 59°, 66°, 62°, 55°,
 44°, 49°, 62°, 61°, 59°, 54°, 57°, 58°, 63°, 60°

Using the data, complete the frequency table below.

Interval	Tally	Frequency
40–44		
45–49		
50–54		
55–59		
60–64		
65–69		

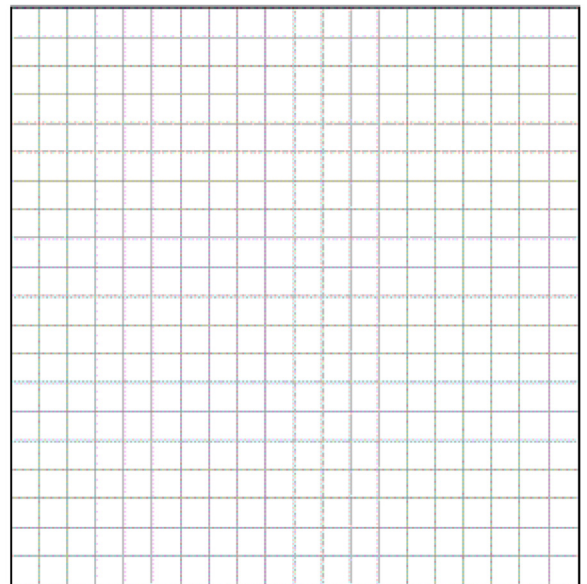
On the grid below, construct and label a frequency histogram based on the table.



- 2 In the time trials for the 400-meter run at the state sectionals, the 15 runners recorded the times shown in the table below.

400-Meter Run	
Time (sec)	Frequency
50.0–50.9	
51.0–51.9	
52.0–52.9	
53.0–53.9	
54.0–54.9	

- a Using the data from the frequency column, draw a frequency histogram on the grid provided below.



- b What percent of runners completed the time trial between 52.0 and 53.9 seconds?

Regents Exam Questions

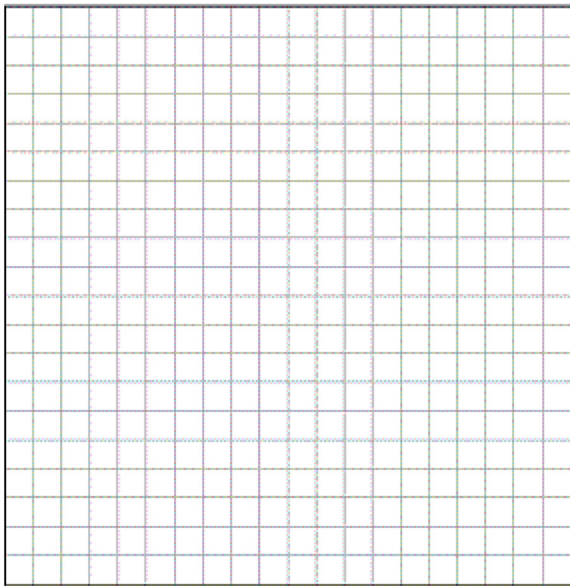
A.S.5: Frequency Histograms, Bar Graphs and Tables

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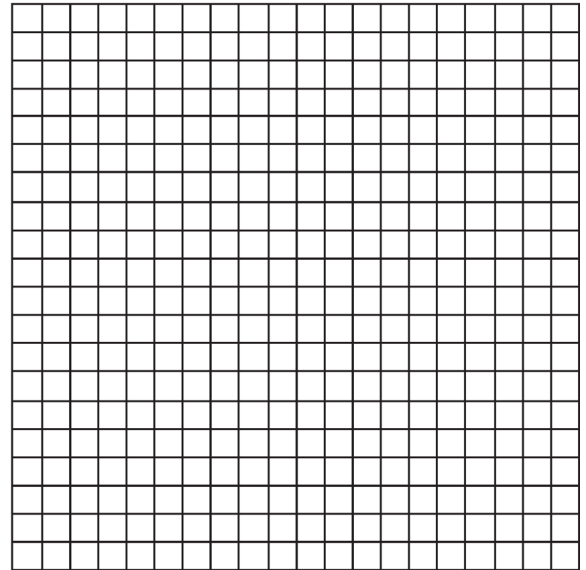
Name: _____

- 3 The scores on a mathematics test were:
70, 55, 61, 80, 85, 72, 65, 40, 74, 68, 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		



- 4 On a science quiz, 20 students received the following scores:
100, 95, 95, 90, 85, 85, 85, 80, 80, 80,
80, 75, 75, 75, 70, 70, 65, 65, 60, 55
Construct a statistical graph, such as a histogram or a stem-and-leaf plot, to display this data. [*Be sure to title the graph and label all axes or parts used.*]



Regents Exam Questions

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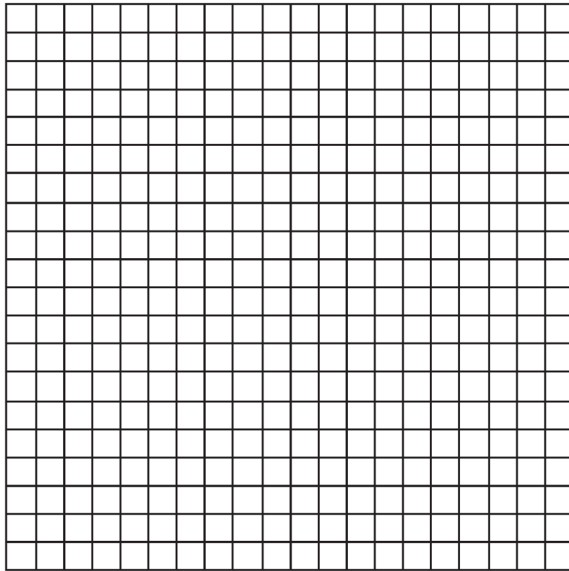
Name: _____

- 5 Sarah's mathematics grades for one marking period were:

85, 72, 97, 81, 77, 93, 100, 75, 86, 70, 96, 80

a Complete the tally sheet and frequency table below, and construct and label a frequency histogram for Sarah's grades using the accompanying grid.

Interval (grades)	Tally	Frequency
61-70		
71-80		
81-90		
91-100		



b Which interval contains the 75th percentile (upper quartile)?

- 6 The following set of data represents the scores on a mathematics quiz:

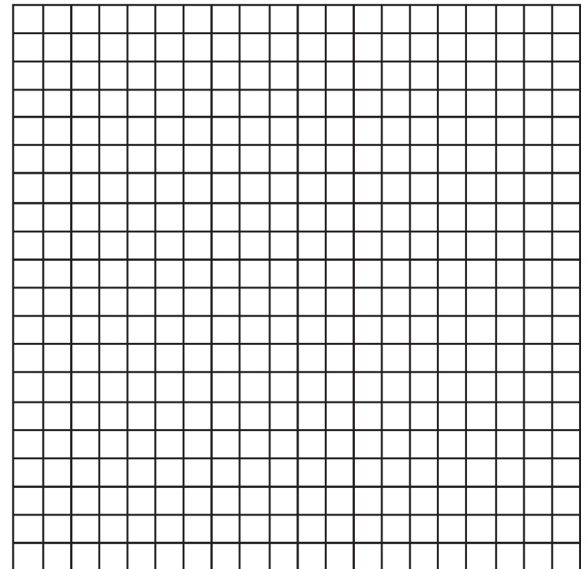
58, 79, 81, 99, 68, 92, 76, 84, 53, 57,

81, 91, 77, 50, 65, 57, 51, 72, 84, 89

Complete the frequency table below and, on the accompanying grid, draw and label a frequency histogram of these scores.

Mathematics Quiz Scores

Interval	Tally	Frequency
50-59		
60-69		
70-79		
80-89		
90-99		



Regents Exam Questions

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- 7 The daily high temperatures for the month of February in New York City were:

34°, 37°, 31°, 36°, 30°, 32°, 32°,
 34°, 30°, 37°, 31°, 30°, 30°, 31°,
 36°, 34°, 36°, 32°, 32°, 30°, 37°,
 31°, 36°, 32°, 31°, 36°, 31°, 35°

Complete the table below. Use the table to construct a frequency histogram for these temperatures on the accompanying grid.

Temperature, in Degrees	Tally	Frequency
30		
31		
32		
33		
34		
35		
36		
37		



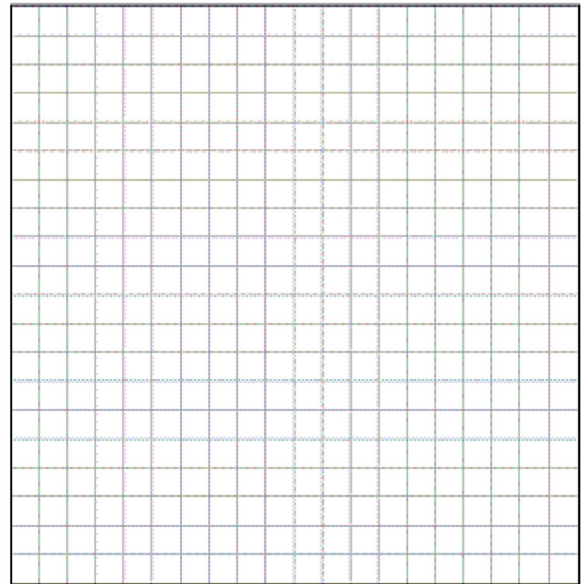
- 8 The test scores for 18 students in Ms. Mosher's class are listed below:

86, 81, 79, 71, 58, 87, 52, 71, 87,
 87, 93, 64, 94, 81, 76, 98, 94, 68

Complete the frequency table below.

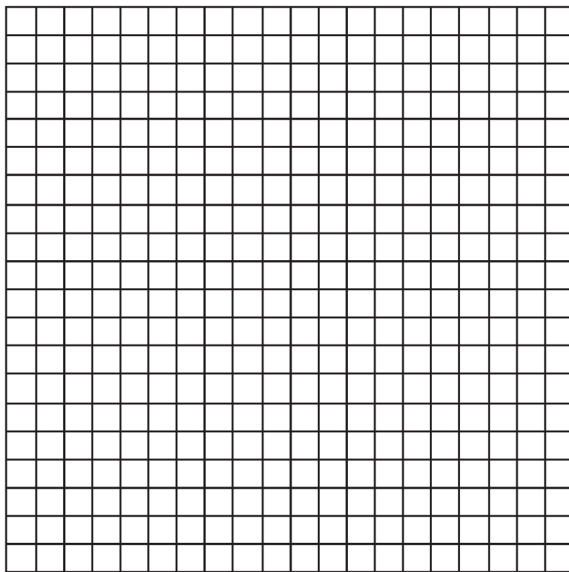
Interval	Tally	Frequency
51–60		
61–70		
71–80		
81–90		
91–100		

Draw and label a frequency histogram on the grid below.



- 9 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	0	
141–150	2	
151–160	2	



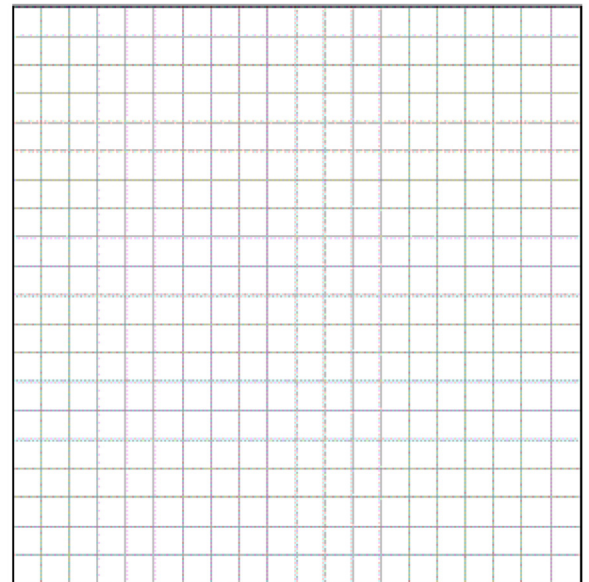
Interval	Tally	Frequency
0–1		
2–3		
4–5		
6–7		

Complete the cumulative frequency table below using these data.

Number of Days Outside

Interval	Cumulative Frequency
0–1	
0–3	
0–5	
0–7	

On the grid below, create a cumulative frequency histogram based on the table you made.



- 10 Twenty students were surveyed about the number of days they played outside in one week. The results of this survey are shown below.

{6,5,4,5,0,7,1,5,4,4,3,2,2,3,2,4,3,4,0,7}

Complete the frequency table below for these data.

Regents Exam Questions

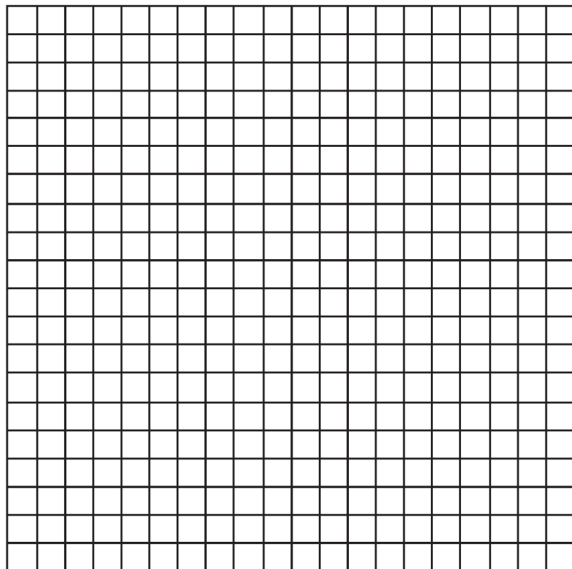
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Name: _____

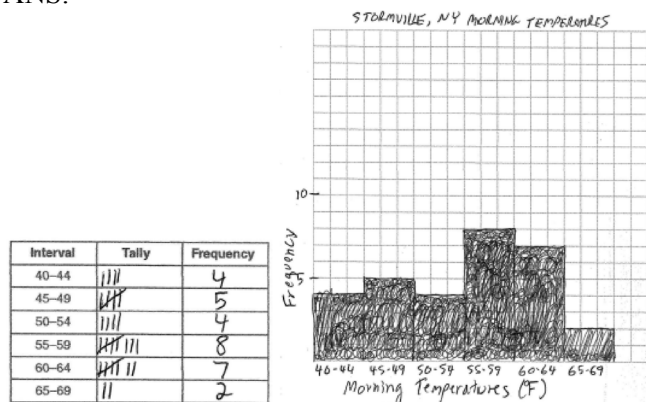
- 11 The following data consists of the weights, in pounds, of 30 adults:
 195, 206, 100, 98, 150, 210, 195, 106, 195, 168,
 180, 212, 104, 195, 100, 216, 195, 209, 112, 99,
 206, 116, 195, 100, 142, 100, 135, 98, 160, 155
 Using the data, complete the accompanying cumulative frequency table and construct a cumulative frequency histogram on the grid below.

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



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Answer Section

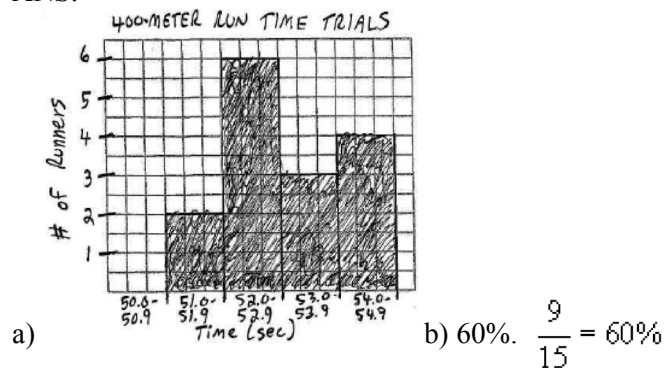
1 ANS:



PTS: 4

REF: 060938ia

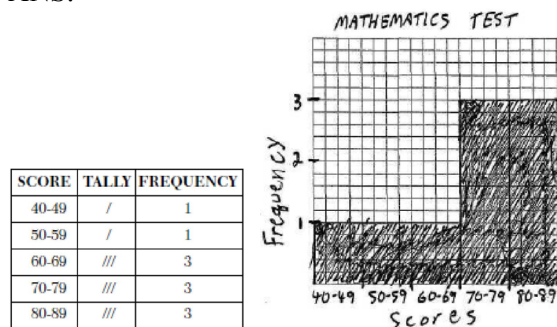
2 ANS:



PTS: 4

REF: 010032a

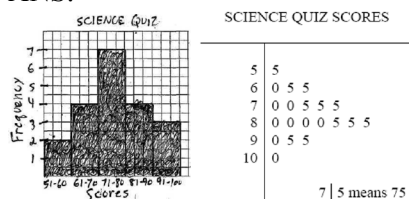
3 ANS:



PTS: 4

REF: 060033a

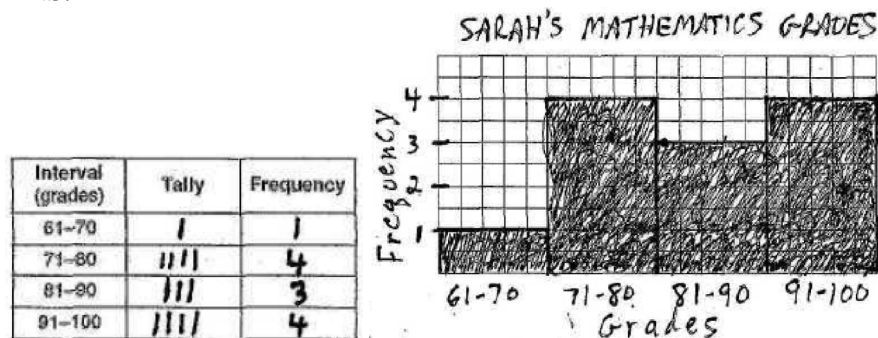
4 ANS:



PTS: 4

REF: 010132a

5 ANS:

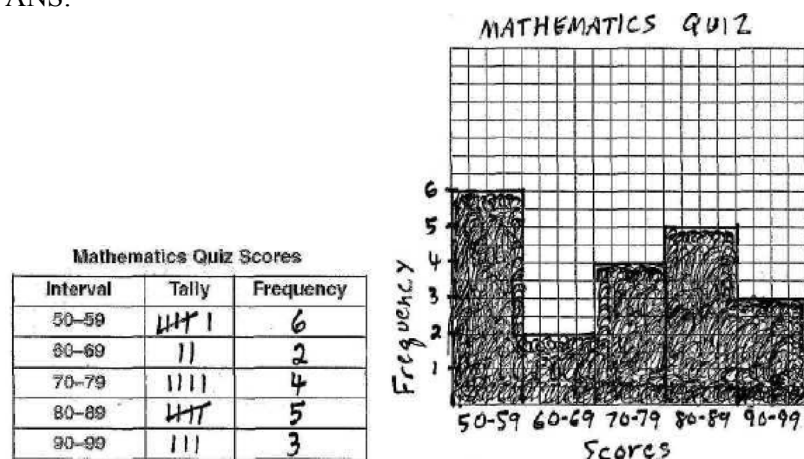


91-100. Since there are 12 grades, the 75th percentile begins with the ninth (12 x 75%) highest grade, which is in the 91-100 interval.

PTS: 4

REF: 010334a

6 ANS:

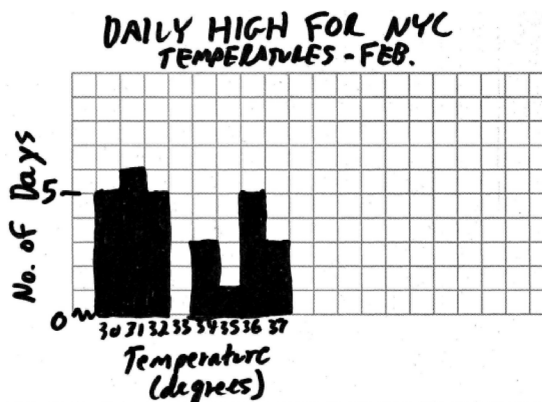


PTS: 3

REF: 080437a

7 ANS:

Temperature, in Degrees	Tally	Frequency
30		5
31		6
32		5
33		0
34		3
35		1
36		5
37		3

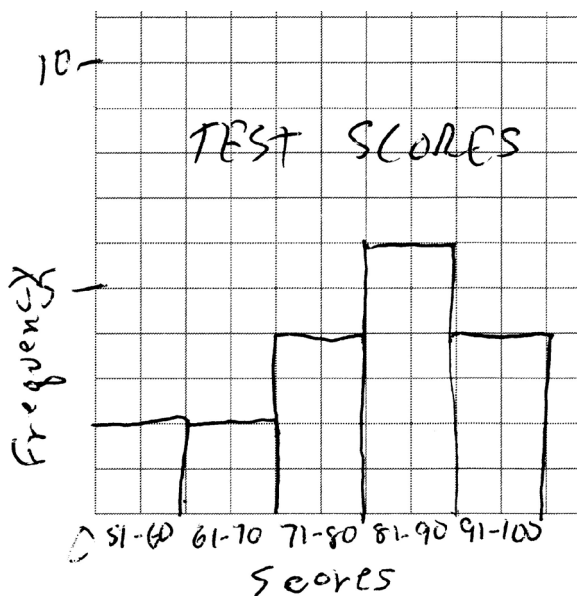


PTS: 4

REF: 010939a

8 ANS:

Interval	Tally	Frequency
51-60		2
61-70		2
71-80		4
81-90		6
91-100		4

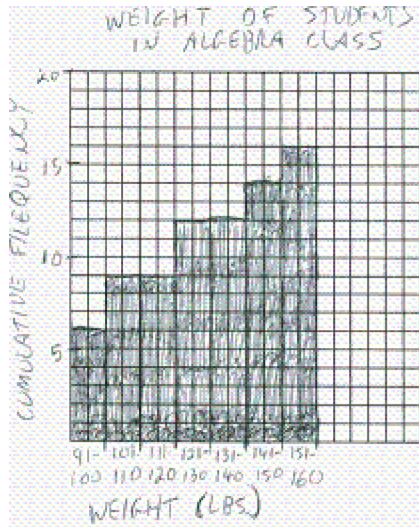


PTS: 3

REF: 011135ia

9 ANS:

Interval	Frequency	Cumulative Frequency
91-100	6	6
101-110	3	9
111-120	0	9
121-130	3	12
131-140	0	12
141-150	2	14
151-160	2	16

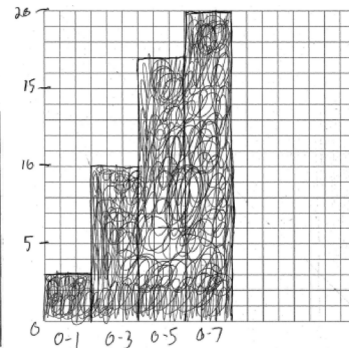


PTS: 4

REF: 010739a

10 ANS:

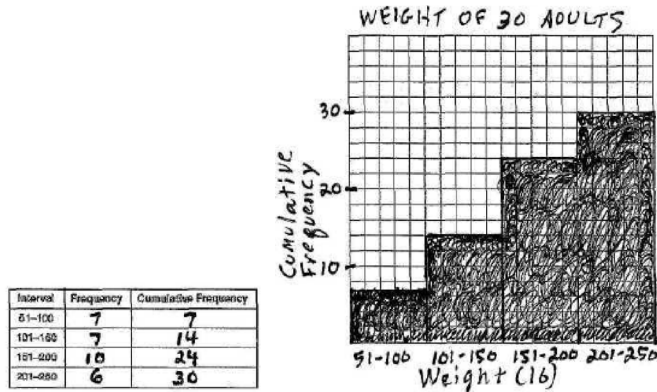
Number of Days Outside			Number of Days Outside	
Interval	Tally	Frequency	Interval	Cumulative Frequency
0-1		3	0-1	3
2-3		7	0-3	10
4-5		7	0-5	17
6-7		3	0-7	20



PTS: 4

REF: 080838ia

11 ANS:



Interval	Frequency	Cumulative Frequency
51-100	7	7
101-150	7	14
151-200	10	24
201-250	6	30

PTS: 4

REF: 080134a