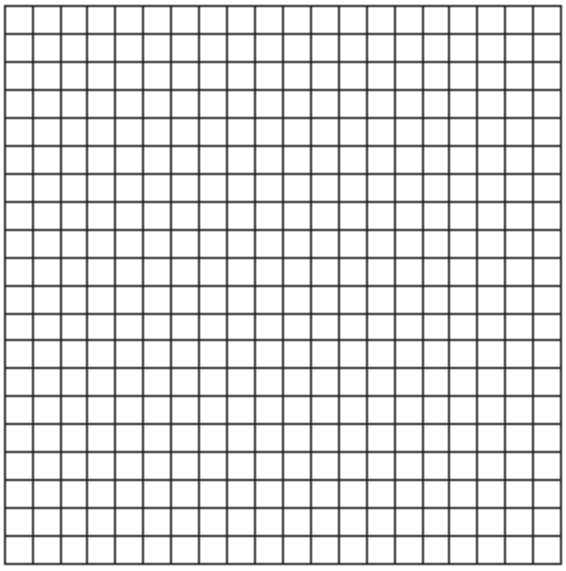
NAME:_____

1. 060938ia, P.I. A.S.8
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		

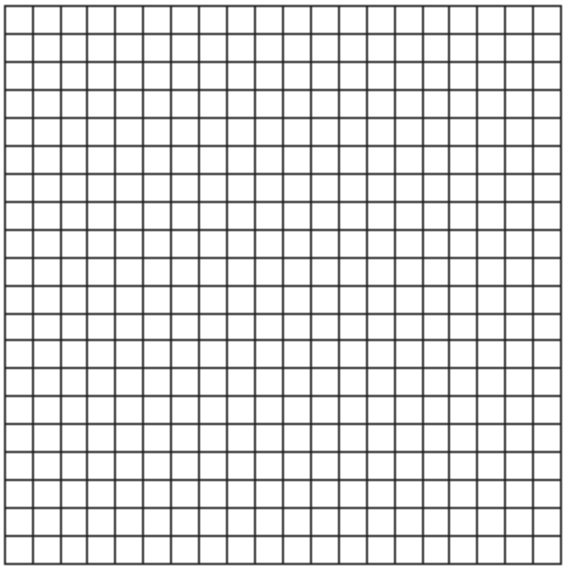
On the grid below, construct and label a frequency histogram based on the table.



2. 080437a, P.I. A.S.5
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

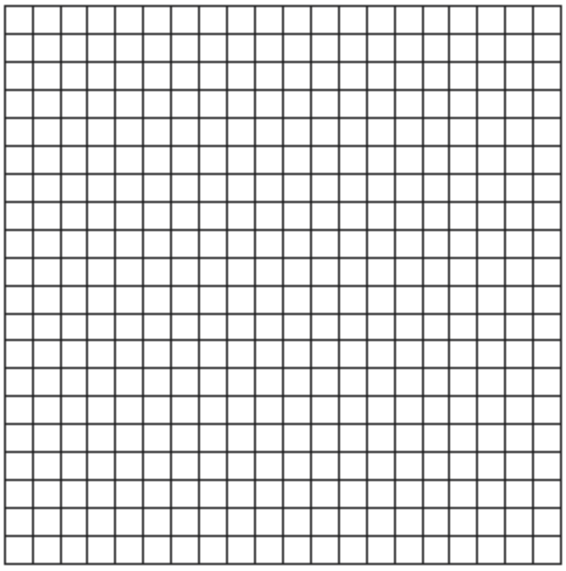
Interval	Tally	Frequency
50–59		
60–69		
70–79		
80–89		
90–99		



NAME:_____

3. 060033a, P.I. A.S.5
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		



4. 010939a, P.I. A.S.5
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°, and 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		

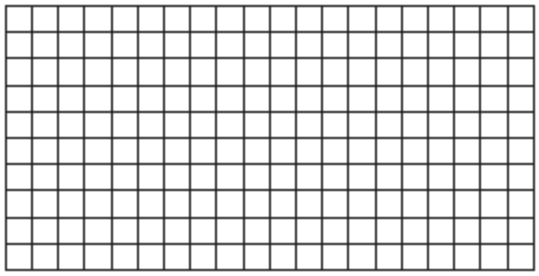
NAME:_____

5. 010334a, P.I. A.S.5

Sarah's mathematics grades for one marking period were 85, 72, 97, 81, 77, 93, 100, 75, 86, 70, 96, and 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		



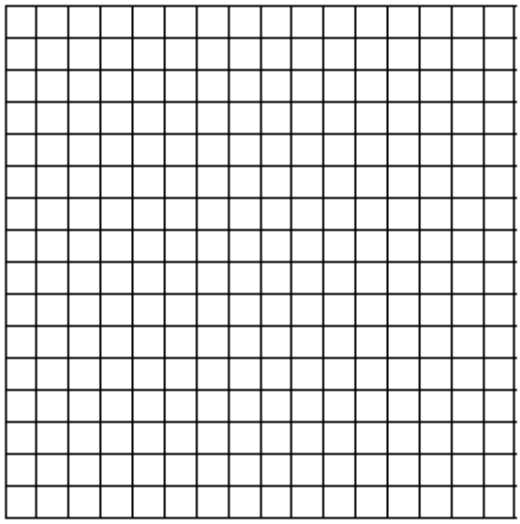
b Which interval contains the 75th percentile (upper quartile)?

6. 010032a, P.I. A.S.5

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	II
52.0–52.9	~~IIII~~ I
53.0–53.9	III
54.0–54.9	IIII

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



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

NAME:_____

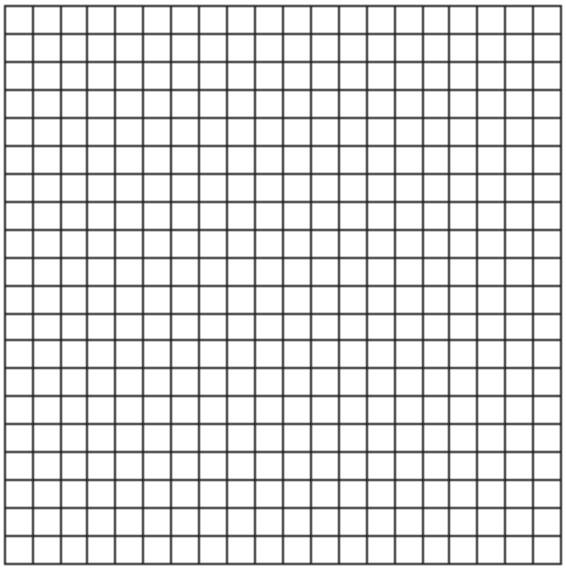
7. 080134a, P.I. A.S.5

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.

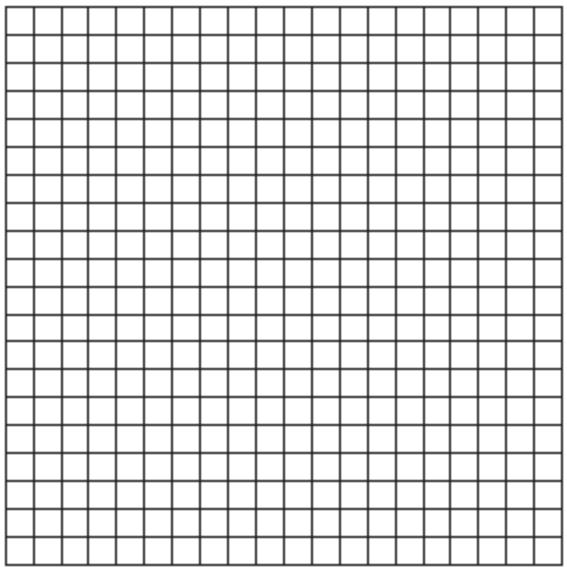
Interval	Frequency	Cumulative Frequency
51–100		
101–150		
151–200		
201–250		



8. 010739a, P.I. A.S.5

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	



NAME:_____

9. 080838ia, P.I. A.S.5

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}

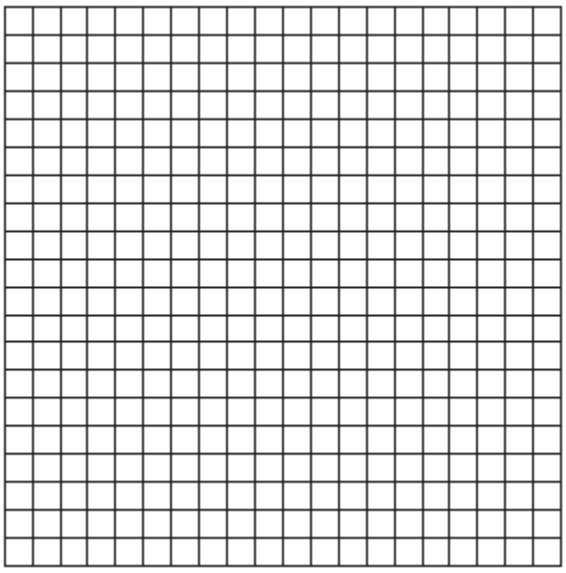
Complete the frequency table and cumulative frequency table below for these data. Create a cumulative frequency histogram based upon the table you made.

Number of Days Outside

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

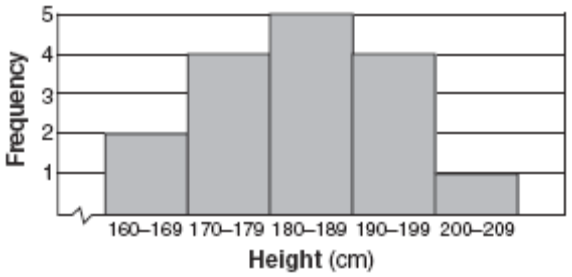
Number of Days Outside

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



10. 010504a, P.I. A.S.9

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] 16 [B] 209 [C] 5 [D] 15

NAME:_____

11. 060822ia, P.I. A.S.9
The table below shows a cumulative frequency distribution of runners' ages.

Cumulative Frequency Distribution of Runners' Ages

Age Group	Total
20–29	8
20–39	18
20–49	25
20–59	31
20–69	35

According to the table, how many runners are in their forties?

[A] 25 [B] 7 [C] 6 [D] 10

12. 060401a, P.I. A.S.9
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	0
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	2
81–90	8
91–100	10

NAME:_____

13. 060839ia, P.I. A.S.4
The prices of seven race cars sold last week are listed in the table below.

Price per Race Car	Number of Race Cars
$126,000	1
$140,000	2
$180,000	1
$400,000	2
$819,000	1

What is the mean value of these race cars, in dollars? What is the median value of these race cars, in dollars? State which of these measures of central tendency best represents the value of the seven race cars. Justify your answer.

14. fall0737ia, P.I. A.S.4
The values of 11 houses on Washington St. are shown in the table below.

Value per House	Number of Houses
$100,000	1
$175,000	5
$200,000	4
$700,000	1

Find the mean value of these houses in dollars. Find the median value of these houses in dollars. State which measure of central tendency, the mean or the median, *best* represents the values of these 11 houses. Justify your answer.

[4] The frequency table is completed correctly, and a correct frequency histogram is drawn and labeled.
[3] The frequency table is completed correctly, but one graphing or labeling error is made in the frequency histogram.
or [3] The frequency table is completed incorrectly, but an appropriate frequency histogram is drawn and labeled.
[2] The frequency table is completed correctly, but two or more graphing or labeling errors are made in the frequency histogram.
or [2] The frequency table is completed correctly, but one conceptual error is made, such as drawing a cumulative frequency histogram, bar graph, or broken-line graph.
[1] Appropriate work is shown, but one conceptual error and one graphing or labeling error are made in the frequency histogram.
or [1] The frequency table is completed incorrectly, and two or more graphing or labeling errors are made in the frequency histogram.
or [1] The frequency table is completed correctly, but no further correct work is shown.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously
[1] incorrect procedure.

[3] The frequency table is completed correctly, showing frequencies of 6, 2, 4, 5, and 3, and a frequency histogram is drawn and labeled correctly.
[2] The frequency table is completed correctly, but one graphing error is made, such as not labeling the axes, having nonequal intervals, or starting the x-axis at 50.
or [2] The frequency table is completed incorrectly, but an appropriate frequency histogram is drawn.
or [2] The frequency histogram is drawn and labeled correctly, but the frequency table is not completed.
[1] The frequency table is completed correctly, but two or more graphing errors are made.
or [1] The frequency table is completed correctly, but no frequency histogram is drawn or a bar graph is drawn.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously
[2] incorrect procedure.

[4] A correct table and histogram with appropriate labels and scales are shown, such as
the table below.

SCORE	TALLY	FREQUENCY
40-49	/	1
50-59	/	1
60-69	///	3
70-79	///	3
80-89	///	3

[3] An incorrect table is shown, but the histogram is appropriate, based on this table.
or [3] A correct table is shown, but one error is made on the histogram, such as using incorrect labels or no labels.
or [3] An incomplete table is shown, but the histogram is correct.
[2] An incomplete table is shown, and the histogram is partially correct.
or [2] A correct table is shown, and a correct bar graph is made.
[1] A correct table is shown.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

[3]

[4] The frequency table is completed correctly and a frequency histogram is drawn with both axes labeled correctly.
[3] The frequency table is completed correctly, but one graphing error is made, such as an incorrect scale or not labeling the axes correctly.
[3] An incorrect frequency table is shown, but an appropriate frequency histogram is drawn and labeled.
[2] The frequency table is completed correctly, but two or more graphing errors are made.
or [2] The frequency table is completed correctly, but one conceptual error is made, such as drawing an appropriate bar graph or a cumulative frequency histogram.
[1] Appropriate work is shown, but one conceptual error and one graphing error are made.
or [1] The frequency table is completed correctly, but no further correct work is shown.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

[4]

a [3] The frequency table is completed correctly, and a histogram is drawn with a correct scale and is labeled correctly.
[2] One or two errors are made in the frequency table, but an appropriate histogram is drawn.
or [2] The frequency table is completed correctly, but one error is made in drawing the histogram.
[1] A correct histogram is drawn, but the frequency table is not completed.
b [1] The interval 91-100 is identified as containing the 75th percentile.
or [1] The appropriate interval is identified, based on an incorrect frequency table in part *a*.
a and *b*
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
[5]

a [2] An appropriate histogram is drawn with both axes labeled with a correct numerical scale.
[1] A correct bar graph is drawn.
or [1] The parts of the histogram are not labeled.
or [1] Equal interval scales are not shown.
or [1] One error on frequency calculation is made.
[0] Two or more mistakes on frequency calculation are made.
b [2] 60% and an appropriate explanation is given.
[1] An appropriate method to find percent is shown, but a mistake is made in reading the chart, such as $\frac{6}{15} = 40\%$ *or* $\frac{9}{15}$ is shown but not given as a percent answer.
or [1] 60% and no explanation is given.
a and b
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
[6]

[4] Correct cumulative frequencies of 7, 14, 24, and 30 and a fully labeled correct histogram are shown.
[3] Incorrect cumulative frequencies are shown, but the histogram is appropriate for the data.
or [3] Correct cumulative frequencies are shown, but a partially incorrect histogram is shown, such as the axes not being labeled, having nonequal intervals, or the x-axis starting at 50.
[2] Only a frequency histogram is completed correctly.
or [2] Only a correct cumulative frequency table and a correct bar graph are shown.
[1] An appropriate bar graph is shown, but it is based on frequencies, not the cumulative frequency.
or [1] Only a correct cumulative frequency table is shown.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
[7]

[4] The table is completed correctly, and an appropriate cumulative frequency histogram is drawn and labeled.
[3] The table is completed correctly, but one error is made in drawing the cumulative frequency histogram or one or more labeling errors are made.
or [3] The table is not completed correctly, but an appropriate cumulative frequency histogram is drawn, based on the table.
[2] One error is made in completing the table, and one graphing error is made in drawing the cumulative frequency histogram.
or [2] The table is completed correctly, but one conceptual error is made, such as drawing a frequency histogram or a cumulative frequency bar graph.
[1] The table is completed correctly, but no histogram is drawn.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

[8]

[4] The tables are completed correctly, and a correct cumulative frequency histogram is drawn and labeled.
[3] The tables are completed correctly, but one graphing error is made on the cumulative frequency histogram.
or [3] The tables are completed with one error, but an appropriate cumulative frequency histogram is drawn and labeled.
or [3] The tables are completed correctly and a correct cumulative frequency histogram is drawn, but the histogram is not labeled or is labeled incorrectly.
[2] The tables are completed with two errors, but an appropriate cumulative frequency histogram is drawn and labeled.
or [2] Appropriate work is shown, but one conceptual error is made, such as drawing a frequency histogram or a cumulative frequency bar graph.
or [2] The tables are completed correctly, but no further correct work is shown.
[1] Appropriate work is shown, but one conceptual error and one graphing or labeling error are made on the cumulative frequency histogram.
or [1] The frequency table is completed correctly, but no further correct work is shown.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

[9]

[10] A

[11] B

[12] B

[13]

[4] Mean=315,000, median=180,000, and the median is stated to be the best measure of central tendency, an appropriate justification is given, and appropriate work is shown.
[3] Appropriate work is shown, but one computational error is made, but an appropriate measure of central tendency is stated, and an appropriate justification is given.
or [3] Mean=315,000, median=180,000, and the median is stated to be the best measure of central tendency, but no further correct work is shown.
[2] Appropriate work is shown, but two computational errors are made, but an appropriate measure of central tendency is stated, and an appropriate justification is given.
or [2] Appropriate work is shown, but one conceptual error is made.
or [2] Appropriate work is shown to find mean=315,000 and median=180,000, but no further correct work is shown.
[1] Appropriate work is shown, but one conceptual error and one computational error are made.
or [1] Appropriate work is shown to find mean=315,000 or median=180,000, but no further correct work is shown.
or [1] Mean=315,000 and median=180,000, but no further correct work is shown, and no justification is given.
[0] Mean=315,000 or median=180,000, but no further correct work is shown, and no justification is given.
or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

[14]

[4] Mean = 225,000, median = 175,000, and the median is stated to be the best measure of central tendency, an appropriate justification is given, and appropriate work is shown.
[3] Appropriate work is shown, but one computational error is made, but an appropriate measure of central tendency is stated, and an appropriate justification is given.
or [3] Mean = 225,000, median = 175,000, and the median is stated to be the best measure of central tendency, but no justification is given.
[2] Appropriate work is shown, but two or more computational errors are made, but an appropriate measure of central tendency is stated, and an appropriate justification is given.
or [2] Appropriate work is shown, but one conceptual error is made.
or [2] Appropriate work is shown to find mean = 225,000 and median = 175,000, but no further correct work is shown.
[1] Appropriate work is shown, but one computational error and one conceptual error are made.
or [1] Mean = 225,000 and median = 175,000, but no further work is shown.
[0] Mean = 225,000 or median = 175,000, but no further work is shown.
or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.