Algebra 1 SOL Released Questions:

Statistics

The data set shown has a mean of 37 and a standard deviation of 6.3, rounded to the nearest tenth.

$\{26, 29, 32, 33, 35, 36, 37, 39, 40, 44, 45, 48\}$

How many of these data points have a z-score greater than -0.6 ?

A 3

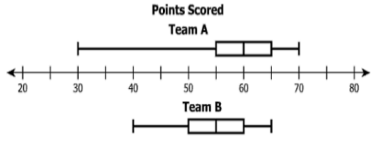
B 5

C 8

D 9

PIG 20009

The number of points two basketball teams scored is summarized in these box-and-whisker plots.



- Team A scored a different number of points in each of the team's 14 games.
- Team B scored a different number of points in each of the team's 13 games.

What is the total number of games that Team A and Team B scored 55 or more points?

A 13

B 14

C 16

D 18

PIG 2009

Directions: Type your answer in the box. Your answer must be in decimal form, rounded to the nearest hundredth. Use "." for the decimal point.

A data set has a mean of 68.42 and a standard deviation of 7.91. An element in this set is 57.

What is the z-score for 57? Round the answer to the nearest hundredth.

z-score =

PIG 2009

This table shows data on the number of dollars raised during a fundraiser for four different classes and for one student in each class.

Number of Dollars Raised

	Mean for Class	Standard Deviation for Class	Student's z-Score
Jill	60	11	1.8
Kelli	58	12	2.1
Monroe	55	13	1.4
Tim	57	10	2.5

Which of the four students raised the greatest number of dollars?

A Jill

B Kelli

C Monroe

D Tim

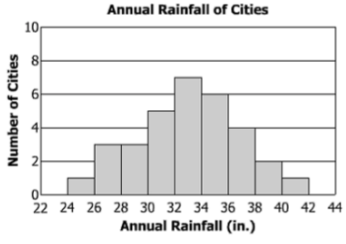
PIG 2009

Directions: Click on a bar to choose each interval you want to select. You must select all correct intervals.

The data on the annual rainfall for 32 cities is summarized in this histogram.

- The mean amount of rainfall for these cities is 32.5 inches.
- The standard deviation of the data is 4 inches.

On the histogram, identify each interval that may have data points within 1.5 standard deviations of the mean.



PIG 2009

Directions: Click on all numbers you want to select. Only select the correct numbers.

A set of data for the number of points a basketball team earned for each of 9 games in a tournament is shown. The mean for the data set is approximately 80.1 and the standard deviation is approximately 6.1. Using these approximations, which scores are within one standard deviation of the mean?

{ 71 , 73 , 75 , 78 , 80 , 82 , 85 , 87 , 90 }

PIG 2009

The mean for a data set is 45. The z-score for data point a is 0. The z-score for data point b is 0.2. Which are the possible values for data points a and b ?

A $a = 0$ and $b = 45.8$

B $a = 0$ and $b = 44.2$

C $a = 45$ and $b = 45.8$

D $a = 45$ and $b = 44.2$

PIG 2009

Statistical information for a data set is given.

- **The mean of the data set is 30.**
- **The standard deviation for the data set is 3.**
- **The z-score for a data point in this set is 2.25.**

In which interval is this data point?

A $18 \leq x < 24$

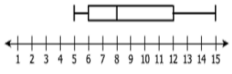
B $24 \leq x < 30$

C $30 \leq x < 36$

D $36 \leq x < 42$

PIG 2009

A baker recorded the number of batches of cookies he made on each of seven days. He baked a different number of batches of cookies each day. This box-and-whisker plot summarizes his data.



The baker baked 20 batches of cookies on the eighth day. He redraws the box-and-whisker plot to include his data. Which statement comparing the new box-and-whisker plot to the original box-and-whisker plot is NOT true?

A The median increased.

B The lower extreme increased.

C The upper extreme increased.

D The value of the interquartile range increased.

PIG 2009

The table shows high temperatures for four Virginia cities during one week in March.

March High Temperatures (degrees Fahrenheit)

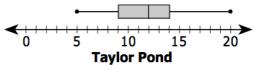
Day	Arlington	Norfolk	Roanoke	Virginia Beach
Sunday	52	52	63	50
Monday	70	71	70	73
Tuesday	74	75	65	78
Wednesday	66	70	57	68
Thursday	56	53	59	55
Friday	50	70	48	71
Saturday	63	73	54	72

Which city had the greatest mean high temperature during this week?

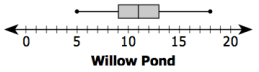
F Arlington
G Norfolk
H Roanoke
J Virginia Beach

2010

Collin caught 15 fish in each of the two ponds on his ranch. The box-and-whisker plots summarize the lengths in inches of the fish from each pond.



Taylor Pond



Willow Pond

The lengths of the fish from Willow Pond have a —

F greater range than the lengths of those from Taylor Pond
G median equal to 12 inches
H mean equal to 20 inches
J lower quartile equal to the lower quartile for Taylor Pond

2010

Jake worked part-time at a restaurant. The amount of money Jake earned for each of six weeks is shown.

$40, $80, $38, $40, $32, $65

Jake then earned $25 for working a seventh week. How were the mean and median affected?

A The mean decreased and the median remained the same.
B The median decreased and the mean remained the same.
C The median and the mean both remained the same.
D The mean and the median both decreased.

2010

The chart below shows the scores for each of the first 10 basketball games for the Hawks and the Blue Jays.

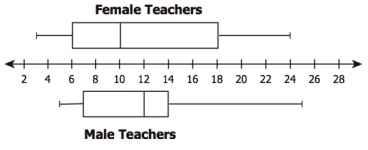
Hawks	Blue Jays
95	91
93	103
93	93
93	76
82	91
81	95
80	90
103	104
87	95
98	95

Which of the following is true?

A The mode for the Hawks is less than the mode for the Blue Jays.
B The mean for the Blue Jays is less than the mean for the Hawks.
C The median for the Hawks is greater than the median for the Blue Jays.
D The range for the Hawks is greater than the range for the Blue Jays.

2009

The male and female teachers at Mountainview School recorded the number of years they have been teaching at the school. The box-and-whisker plots summarize the data.

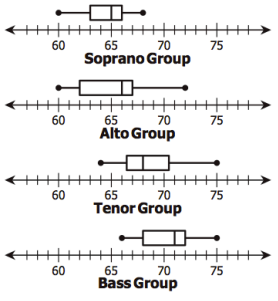


Which statement is *false*?

A The teacher with the least number of years teaching is female.
B The range in the years teaching is greater for male teachers than for female teachers.
C The difference in the maximum number of years teaching for male and female teachers is 1.
D The median number of years teaching for female teachers is 2 less than the median for male teachers.

2009

The heights in inches of each member of the four groups of a choir are represented in the box-and-whisker plots.



Which group has the median with the *greatest* value?

F Soprano
G Alto
H Tenor
J Bass

2008

Alvin and Ben compared the weights of the members of each of their respective teams in their Physical Education class.

Alvin's Team Weights (pounds)	Ben's Team Weights (pounds)
135	134
126	127
119	120
123	122
131	130
125	126
120	122
132	133

What is the difference in the median weights of the two teams?

A 0.250 lb
B 0.375 lb
C 0.500 lb
D 1.000 lb

2008

If the mean of a set of 12 numbers is 13, then the sum of the numbers is –

A 25
B 144
C 156
D 169

2007

The times in minutes for each of Curt's phone calls this week are shown in this list.

9, 15, 5, 7, 9, 12, 11, 4

Which statement is true regarding the duration of his calls?

F The mode is greater than 7.
G The mean is less than 8.
H The range is less than 10.
J The median is greater than 10.

2007

The table below shows the home construction firms in the community and the number of homes each built last year.

Builder	Number of Homes
Acme	51
Quality	25
Custom	12
Professional	10
Courtesy	43
Personal	50
AA	41
Reliable	39
Dependable	25

Which of the following statements is true regarding the number of homes built?

F The range is less than the mean.
G The mode is greater than the mean.
H The mode is greater than the median.
J The median is greater than the mean.

2007

The stem-and-leaf plots show the number of miles per gallon a family's car and truck averaged over the past few months.

Car

Stem	Leaf
1	7, 7, 9
2	3, 4, 7, 7, 7
3	0, 1, 1, 2, 3, 4, 4

Truck

Stem	Leaf
1	1, 2, 3, 5, 6, 8, 8, 8
2	0, 0, 1, 1, 2, 2, 3, 4, 6
3	

What is the difference in the median number of miles per gallon for the two vehicles?

A 7
B 9
C 10
D 11

2006

Tommy and Jeremy are pitchers for the baseball team and are being evaluated by the coach. The speeds in miles per hour of each of their practice pitches are shown below.

Practice Pitch Speeds

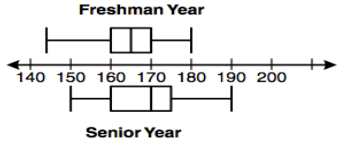
Tommy	Jeremy
60	63
69	70
85	79
68	67
80	65
73	72
65	68

Which of the following statements is true regarding their performances?

F Tommy has a lower mean speed.
G Tommy has a greater range of speeds.
H Tommy has a lower median speed.
J Jeremy's median speed is higher than Tommy's mean speed.

2006

The box-and-whisker plot shows the heights in centimeters of high school seniors compared to their heights as freshmen.



Using the median as the measure, which is closest to the difference in heights between the freshman and senior years?

A 0 cm
B 5 cm
C 10 cm
D 15 cm

2006

The table below shows the number of boxes of cookies sold by members of two softball teams, the Hawks and the Tigers.

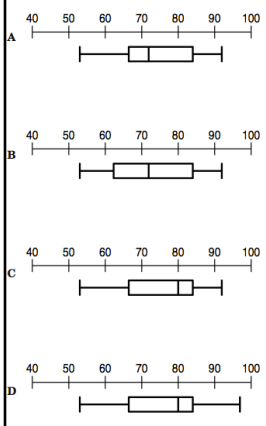
Hawks	Tigers
14	14
17	53
32	23
37	43
67	37
28	23
37	52
24	14
27	11
18	6

What is the difference in the mean number of cookies sold by the two teams?

A 2.5
B 4.5
C 6
D 14

2006

These are box-and-whisker plots of four different groups of test scores. Which has the greatest range?



2005

A student scored 85, 49, 67, and 83 on four tests. What score would the student need to make on the next test to have a mean score of 75?

F 75
G 79
H 86
J 91

2005

{5, 6, 6, 8, 9, 10}

For the data set shown, which measure is the greatest?

A Mean
B Median
C Mode
D Range

2005

Sally recorded her daily grades for one grading period.

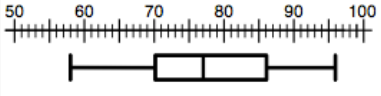
88, 88, 87, 92, 78, 88, 93, 100, 92, 90, 92, 92

What was her mean grade?

A 92
B 91
C 90
D 88

2004

Mr. Andrews made a box-and-whisker graph of the quiz grades in his chemistry class.



Which is the median quiz grade for the class?

F 70
G 77
H 80
J 85

2004

The chart below shows the ages in years of the girls on two Olympic teams.

Gymnastics	14	17	15	15	16	13	12
Swimming	15	17	19	12	14	18	12

What is the difference in the median ages of the two teams?

F 0 yrs
G 1 yrs
H 2 yrs
J 3 yrs

2004

Joe's New Car dealership lists the following prices for this year's models.

$10,469, $12,895, $15,499, $17,999, $18,595, $21,245, $10,395, $14,985

What is the range in prices?

A $15,260
B $15,242
C $10,850
D $10,776

2004

Barry's daily grades for one grading period are shown below.

94, 88, 87, 92, 78, 88, 93, 100, 92, 90, 92, 85

What was the mode of his daily grades?

F 93
G 92
H 91
J 90

2003

The stem-and-leaf plot shows the results of a science experiment in which 12 plants were each given a different combination of water and nutrients over a period of time and their growth in millimeters measured.

Millimeters Growth

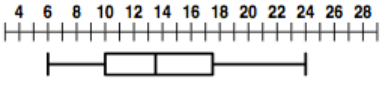
0	8
1	2,4,4,4,5,7,8
2	2,4,6
3	1

What was the median number of millimeters of growth?

A 14
B 15
C 16
D 17

2003

Scott made a box-and-whisker graph of the soccer goals made by the players in his district.

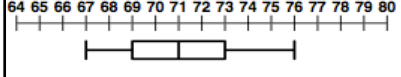


What is the range of the goals made by the players?

A 24
B 18
C 6
D 4

2003

Alberto made the box-and-whisker graph of the heights (in inches) of the members of his basketball team.



What is the range of heights of the team members?

F 16 in.
G 9 in.
H 4 in.
J 2 in.

2002

Carol went on a 5-day bicycle trip. She rode 23 miles the first day, 22 miles the second, 21 miles the third, 17 miles the fourth, and 17 miles the fifth day. What was the mean number of miles per day that Carol rode on her 5-day bicycle trip?

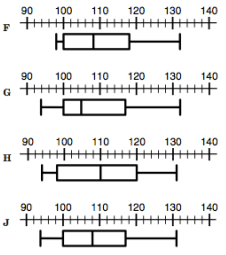
A 6 mi.
B 20 mi.
C 21 mi.
D 23 mi.

2002

Researchers testing a new high blood pressure medication measured the initial blood pressure data of 15 patients before testing the drug.

Diastolic B.P.

Stem	Leaf
9	4, 5, 8
10	0, 2, 3, 4, 8
11	1, 6, 7, 7
12	2, 7
13	1



Which box-and-whisker graph best represents the stem-and-leaf plot?

2002

During a summer reading program, Mary read 9 books. The books contained 217 pages, 138 pages, 159 pages, 356 pages, 270 pages, 112 pages, 138 pages, 210 pages, and 195 pages. What was the median number of pages of the 9 books that Mary read during the summer reading program?

A 138
B 159
C 195
D 244

2001

In which data set is the median value equal to the mean value?

A {2, 4, 6, 7, 8}
B {12, 18, 20, 23, 24}
C {16, 17, 18, 19, 20}
D {50, 60, 65, 75, 85}

2001

Jorge made the following stem-and-leaf diagram of the weights of the members of the football team he was coaching.

Stem	Leaf
10	9
11	
12	3, 8
13	2, 4, 4, 6, 8
14	1, 3, 5, 5, 9
15	2, 3, 7, 7, 9
16	1, 3, 7, 8, 8, 8, 9
17	3, 8

What was the mode of the weight of the players on the team?

F 145
G 150
H 152
J 168

2001

Mari and Marc are bowling a 3-game match to determine the top bowler for their league. Marc averaged 163 for his three games. Mari bowled 171 and 145 for her first two games. What is the least she must bowl for her third game if she is to win the championship?

A 150
B 164
C 174
D 180

2000

Stem	Leaf
5	3 4
6	2 4 8
7	0 1 2 5 7 7 9
8	4 5 6 7
9	1 2 4 6

This is a stem-and-leaf plot of a group of test scores. What is the median score?

F 73
G 76
H 77
J 77.5

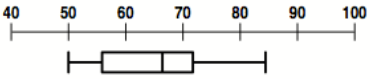
2000

In which data set is the median value equal to the mean value?

A {2, 4, 7, 9, 11}
B {7, 9, 10, 11, 16}
C {6, 12, 18, 24, 27}
D {33, 40, 46, 52, 59}

2000

This is a box-and-whisker plot of a set of scores.



In which quartile would a score of 76 fit in this set?

F 1^{st}
G 2^{nd}
H 3^{rd}
J 4^{th}

2000