Name:_____

Test 6: Unit 10
Constructed Response

CONSTRUCTED-RESPONSE ITEM

13. A number pattern is shown below.

row 1				1				
row 2			4		7			
row 3		10		13		16		
row 4	19		22		25		28	

The pattern continues.

A. What is the difference between the last number in row 5 and the first number in row 5?

difference: _____

B. Write an equation that can be used to find d, the difference between the last number and the first number, for any row r.

d = _____

Go to the next page to finish question 13.

13. *Continued.* Please refer to the previous page for task explanation.

C. What is the first number in row 8?

first number: _____

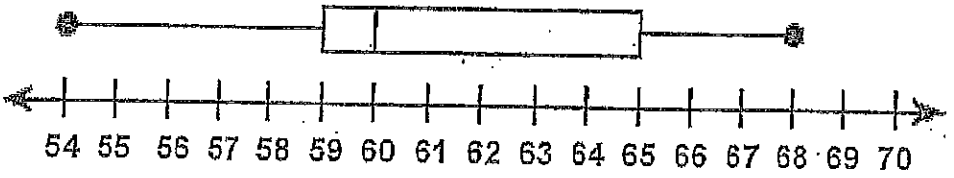
D. What is the last number in row 8?

last number: _____

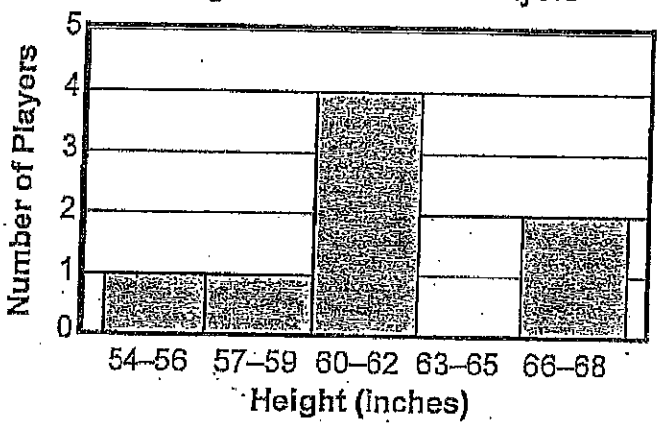
CONSTRUCTED-RESPONSE ITEM

14C. Both the box-and-whisker plot and the histogram shown below represent the heights, in inches, of the same group of basketball players.

Heights of Basketball Players



Heights of Basketball Players



A. Based on the two data displays, what is the range of the heights?

range:_____inches

B. Based on the two data displays, what is the interquartile range of the heights?

interquartile range:_____inches

Go to the next page to finish question 14.

GO ON

14C. ***Continued.*** Please refer to the previous page for task explanation.

C. Based on the two data displays, how many of the basketball players are 60 inches tall?

_____ basketball players

D. Based on the two data displays; what is the mean of the heights?

mean:_____inches

AFTER YOU HAVE CHECKED YOUR WORK, CLOSE YOUR ANSWER BOOKLET AND TEST BOOKLET SO YOUR TEACHER WILL KNOW YOU ARE FINISHED.

Standard A1.2.3

The weight, in pounds, of each wrestler on the high school wrestling team at the beginning of the season is listed below.

178 142 112 150 206 130

A. What is the median weight of the wrestlers?

median: _____ pounds

B. What is the mean weight of the wrestlers?

mean: _____ pounds

Continued next page

Continued. Please refer to the previous page for task explanation.

Two more wrestlers join the team during the season. The addition of these wrestlers has no effect on the mean weight of the wrestlers, but the median weight of the wrestlers increases 3 pounds.

C. Determine the weights of the two new wrestlers.

new wrestlers: _____ pounds and _____ pounds

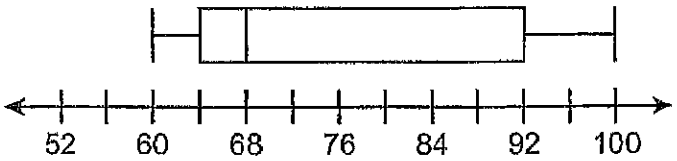
ASSESSMENT ANCHOR
A1.2.3 Data Analysis

Sample Exam Questions

Standard A1.2.3

The box-and-whisker plot shown below represents students' test scores on Mr. Ali's history test.

History Test Scores



A. What is the range of scores for the history test?

range: _____

B. What is the **best** estimate for the percent of students scoring greater than 92 on the test?

percent: _____ %

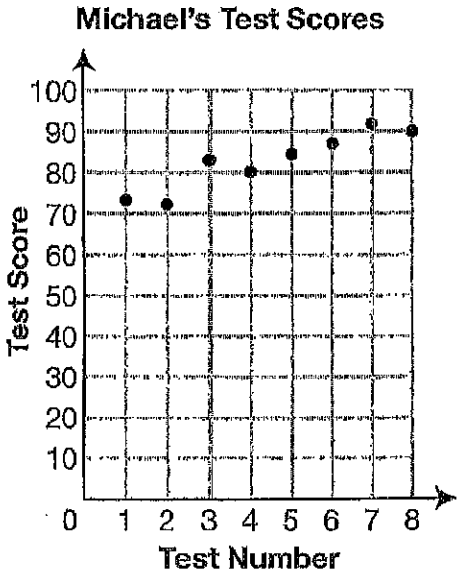
Continued next page

Continued. Please refer to the previous page for task explanation.

Mr. Ali wanted more than half of the students to score 75 or greater on the test.

C. Explain how you know that more than half of the students did **not** score greater than 75.

Michael is a student in Mr. Ali's class. The scatter plot below shows Michael's test scores for each test given by Mr. Ali.



D. Draw a line of best fit on the scatter plot above.

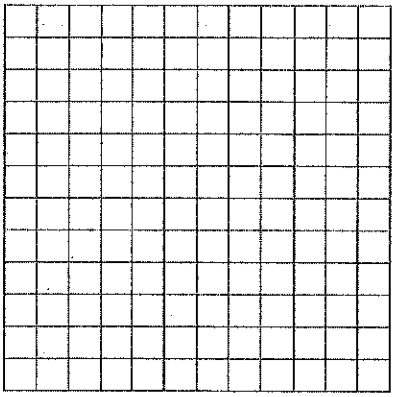
54. Jan started weightlifting and set some goals for herself. She planned to do certain exercises with 20-pound weights during the first month and then to increase this by 10 pounds every month. Her actual results are shown in the table below.

Months after Starting	Weight Used (in pounds)
0	20
1	25
2	25
3	30
4	40

A. According to her plan, how many pounds was Jan supposed to be able to lift at the beginning of the fifth month after starting? Show your work.

_____

B. Make a scatter plot of Jan's actual results using the information in the table, and draw a line of best fit.



C. What is the **best estimate** for how many pounds Jan can lift at the beginning of the fifth month after starting, based on her results in the scatter plot?

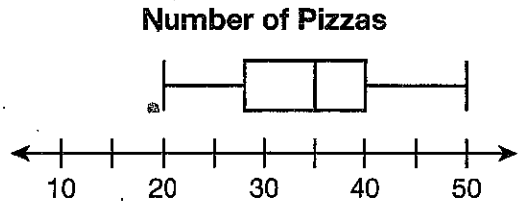
_____

D. Using this estimate, how far short of her goal will Jan be 5 months after starting?

_____

STOP

51. The box-and-whisker plot below summarizes the number of pizzas sold each day at Mac's Pizza Parlor for the past 60 days.



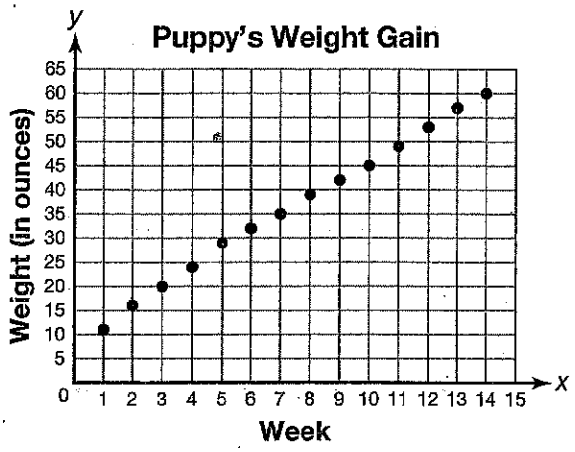
A. What is the interquartile range of this data?

B. On what percent of the days did Mac sell between 35 and 50 pizzas?

C. On how many days did Mac sell between 20 and 28 pizzas?

D. How do you know that Mac sold between 40 and 50 pizzas on 15 days?

16. Kapeni recorded the weight of his new puppy every week for 14 weeks, and he plotted the data on the scatter plot shown below.



A. Draw a line that best fits the data.

B. Write the equation for the line you drew, rounding any numbers to one decimal place.

_____

C. What is the slope of the line of best fit?

_____

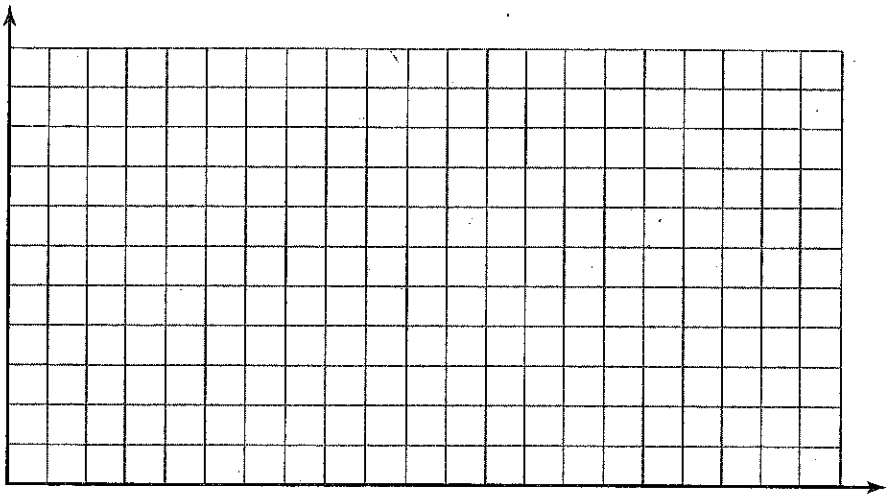
D. What is the *y*-intercept of the line of best fit?

_____

53. On the physical fitness test, students had to complete sit-ups and pull-ups. The table shows how many sit-ups and pull-ups were completed by each student in one minute.

Sit-ups	44	32	40	29	25	20	10
Pull-ups	10	7	7	6	3	2	1

A. Construct a scatter plot below. Be sure to label the axes and provide a title. Place the sit-ups on the *x*-axis and the pull-ups on the *y*-axis.



B. Draw a line of best fit for your data.

C. What type of correlation is shown in this data set?

_____

D. Complete the sentence: Typically, as the number of sit-ups completed _____, the number of pull-ups completed decreases.

52. A bag has 3 red tiles, 5 blue tiles, 7 green tiles, and 10 yellow tiles.

A. If one tile is selected at random, what is the probability that it is green? Express your answer as a fraction, a decimal, and a percent.

B. If one tile is selected at random, what is the probability that it is blue or red? Explain. Express your answer as a fraction.

C. One tile is selected at random and then replaced. A second tile is selected at random. What is the probability that the first is blue and the second is yellow? Express your answer as a fraction. Show your work.

16. At a party, each of 20 students wrote his or her name on a slip of paper and put it into a hat. Names were selected at random to pick a prize from a grab bag at random. The types of items in the grab bag and how many of each are shown in the table below.

Art set	3
Chemistry set	1
Board game	5
Book reader	1

A. What is the probability that the first prize chosen was an art set?

B. Five of the students wanted the art set. What is the probability that the first name chosen was one of these students and he or she picked an art set? Explain.

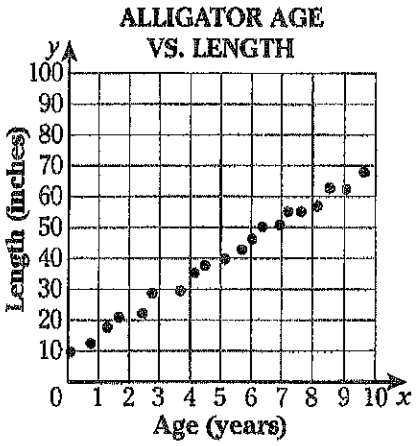
16. ***Continued***. Please refer to the previous page for task explanation.

C. What is the probability that the first prize chosen was an art set and the second prize chosen was a board game? Show your calculation.

D. Is the probability that the first prize chosen was a board game and the second prize chosen was an art set different from the probability in **Part C**? Explain. Show your calculation.

Read the problem. Write your answer for each part.

4. The scatter plot below shows the age and length of 20 alligators.



A Draw the line of best fit on the scatter plot above.

B Write an equation that describes the line of best fit.

Answer: _____

C Explain how you found your equation in **part B.**

D Explain the meaning of the slope of the line in this situation.

Unit 7
Constructed-Response Review

Read the problem. Write your answer for each part.

1. The box-and-whisker plot below shows students' scores on a practice driving test.

A What is the range of the scores?

Answer: _____

B What is the interquartile range?

Answer: _____

C If the plot represents 64 students, about how many scored above the third quartile?

Answer: _____

D A passing score is 80. Explain how you know whether or not 50% of the students passed the test.

Read the problem. Write your answer for each part.

2. Isaac's bowling scores for April are shown below. His mean score after all five games was 221.

ISAAC'S BOWLING SCORES

Game	1	2	3	4	5
Score	225	245	222	230	?

A. What was Isaac's score in game 5?

Answer: _____

B. What was Isaac's median score for the five games?

Answer: _____

C Isaac bowls a sixth game and his median score changes to 227. What is Isaac's score on the sixth game?

Answer: _____

D Explain how you know your answer to **part C** is correct.

Read the problem. Write your answer for each part.

3. Brittney randomly selected 30 cars in a parking lot and determined each car's year of manufacture. She made this stem-and-leaf plot to show the results.

CARS IN PARKING LOT—YEAR OF MANUFACTURE

197	1
198	2 6
199	3 4 5 5 7 7 8 9 9
200	1 2 4 5 5 6 7 7 8 9 9
201	0 0 1 1 2 2 2

Key: 197 | 1 = 1971

A There are about 70,000 cars in the city where Brittney lives. According to Brittney's data, about how many of the cars in her city were manufactured before the year 2000?

Answer: _____

B Find the lower quartile and upper quartile of the data.

Answer: _____

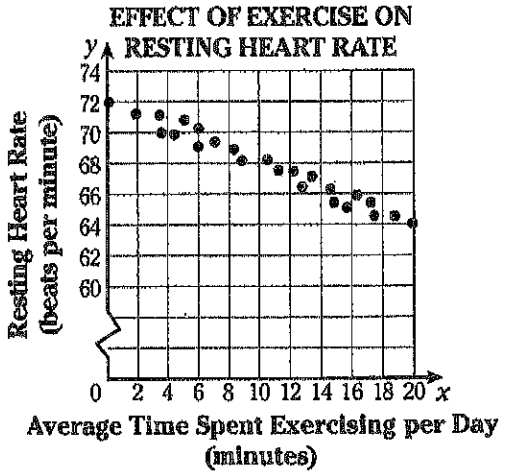
C About how many of the cars in Brittney's city were manufactured between the years you found in **part B?**

Answer: _____

D Explain how you found your answer to **part C.**

Read the problem. Write your answer for each part.

4. The scatter plot shows the results of a study on the effects of exercise on resting heart rate.



A Draw the line of best fit on the scatter plot.

B Write the approximate equation of the line of best fit.

Answer: _____

C Use your equation to predict the resting heart rate of a person who exercises 30 minutes per day.

Answer: _____

D Explain how you found your answer to **part C.**

Read the problem. Write your answer for each part.

5. There are 3 black marbles and 4 red marbles in a bag. Trevor will take out 2 marbles without looking.

   A What is the probability that both marbles will be black? Show your work.

   Answer: _____

   B Explain how you found your answer to **part A.**

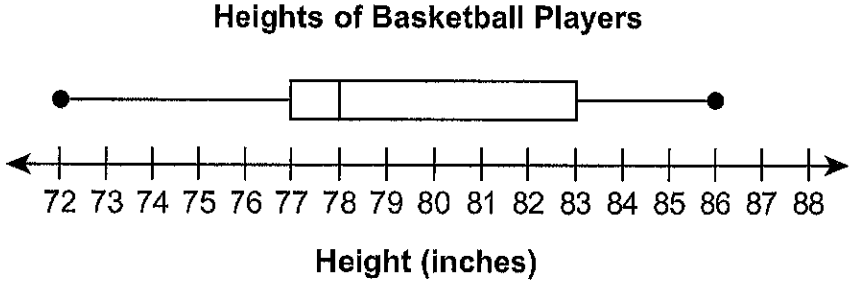
   C Suppose that Trevor takes out 1 marble, replaces it in the bag, then takes out another marble. What is the probability that both marbles will be black in this situation? Show your work.

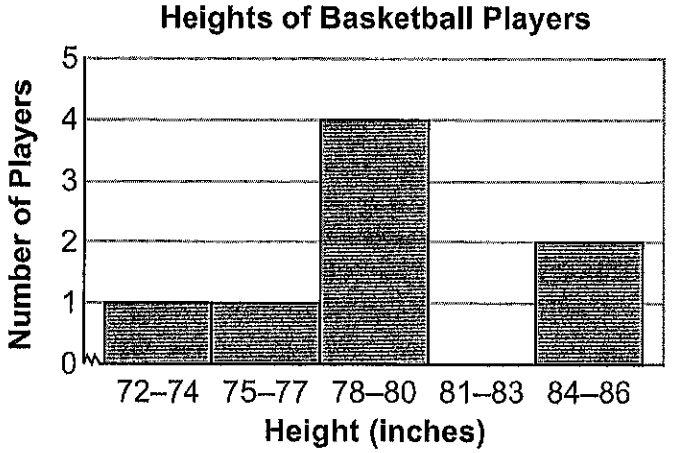
   Answer: _____

   D Explain how you found your answer to **part C.**

CONSTRUCTED-RESPONSE ITEM

14. Both the box-and-whisker plot and the histogram shown below represent the heights, in inches, of the same group of basketball players.





A. Based on the two data displays, what is the range of the heights?

range: _____ inches

B. Based on the two data displays, what is the interquartile range of the heights?

interquartile range: _____ inches

Go to the next page to finish question 14.

GO ON

14. ***Continued.*** Please refer to the previous page for task explanation.

C. Based on the two data displays, how many of the basketball players are 78 inches tall?

_____ basketball players

D. Based on the two data displays, what is the mean of the heights?

mean: _____ inches

AFTER YOU HAVE CHECKED YOUR WORK, CLOSE YOUR ANSWER BOOKLET AND TEST BOOKLET SO YOUR TEACHER WILL KNOW YOU ARE FINISHED.