

Algebra 1 B

Name _____

Keystone Review Free Response

Period _____ Date _____

Free Response #1

Look at the pattern below.

48, 39, 30, 21, ...

- A. If the pattern continues, what are the next three terms?

Answer: _____, _____, _____

- B. Describe how you found your answer in **part A**.

- C. Given the pattern below, write an expression that can be used to find the n^{th} term of the pattern.

6, 1, -4, -9, -14,

Answer: _____

Free Response #2

Leonardo is buying a printer for his computer. He needs to choose between two different brands, the PrintQuick model and the PrintMaster model. For whichever printer he chooses, he will also need to buy ink cartridges. The table below has the information about the cost of each printer and the ink cartridges.

Brand of Printer	Cost of Printer	Cost of Ink Cartridges
PrintQuick	\$50	\$30
PrintMaster	\$80	\$27

- A. Let y be the total cost of purchasing a printer and x ink cartridges. Write an equation for the total cost of purchasing a PrintQuick printer with x ink cartridges.
- B. Write an equation for the total cost of purchasing a PrintMaster printer with x ink cartridges.
- C. Determine how many ink cartridges would have to be purchased for the total cost of both printers to be the same. Show all your work.

Free Response #3

The table shows how the length of Alex's pet lizard is changing over time.

Age (years)	Length (centimeters)
1	5.0
2	7.4
3	9.8
4	12.2
5	14.6

- A. Write an equation using x and y to find the length of the lizard based on its age.

Answer: _____

- B. Describe what the *slope* and *y – intercept* represent in your equation.

- C. Use your equation to predict the length of the lizard when it is 12 years old. Show your work.

Answer: _____

Free Response #4

Suzy made snack mix for her softball team consisting of raisins and peanuts. Raisins cost \$1.50 per pound and peanuts cost \$3.00 per pound. She made a total of 8 pounds of snack mix and spent \$21.00.

- A. Write a system of equations that can be used to find how many pounds of raisins (x) and how many pounds of peanuts (y) Suzy used in her snack mix.

- B. Solve the system of equations.

- C. How many pounds of peanuts did she use in her snack mix?

Free Response #5

To get mulch for his gardens, Mr. Stager had it delivered to his home for a fixed delivery fee plus a cost per cubic yard. First he had 8 cubic yards of mulch delivered and paid \$350. After he had used the 8 cubic yards, he discovered that he still needed more. Then he had 5 more cubic yards delivered and paid \$230.

- A. Find the cost per cubic yard for the mulch that Mr. Stager purchased.
- B. Find the delivery fee.
- C. If Mr. Stager had bought all 13 cubic yards at once, he would have got a discount on the cost per cubic yard and only paid \$524, including the delivery fee. How much of a discount did he receive on each cubic yard?

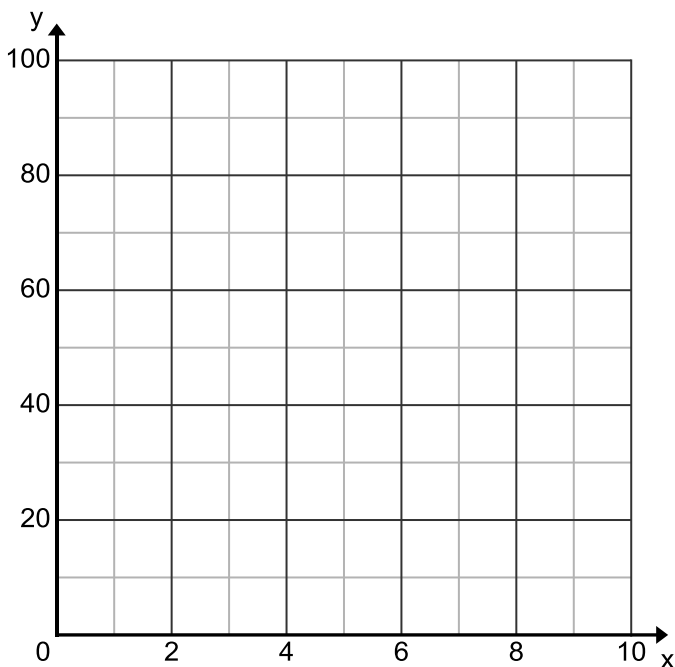
Free Response #6

Michele is a photographer. She sells framed photographs for \$100 dollars each and greeting cards for \$5 each. The materials for each framed photograph cost \$30, and the materials for each greeting card cost \$2. Michelle can sell up to 8 framed photographs and 40 greeting cards each week, but this week she has only \$200 to spend on materials. Michele hopes to earn a profit of at least \$400 this week after paying for materials.

Let x = the number of framed photographs and y = the number of greeting cards Michele will make and sell this week. Two of the inequalities that model this situation are $x \leq 8$ and $y \leq 40$.

A. Write two more inequalities to complete the system of inequalities modeling the situation.

B. Graph the solution area to your system of inequalities on the coordinate plane below.



C. Michele plans to make and sell 5 framed photographs and 20 greeting cards. Is that a reasonable solution to the system of inequalities?

Free Response #7

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: _____

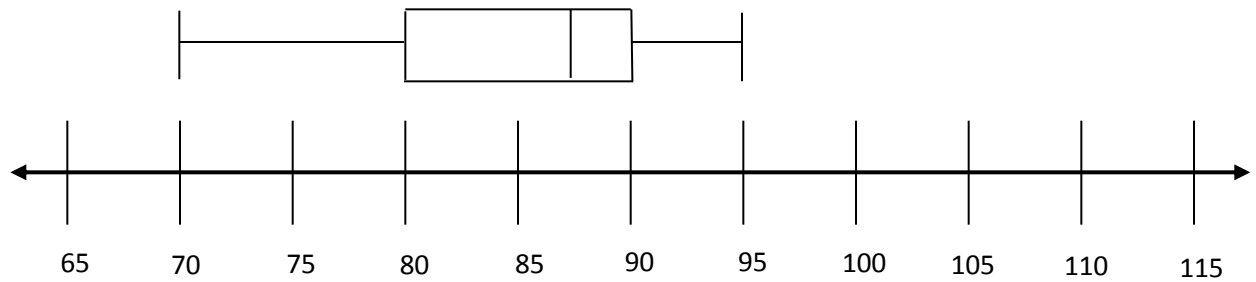
- C. Isaac bowls a sixth game and his median score changes to 227. What is Isaac's score on the sixth game?

Answer: _____

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

Free Response #8

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 85. Explain how you know whether or not 50% of the students passed the test.