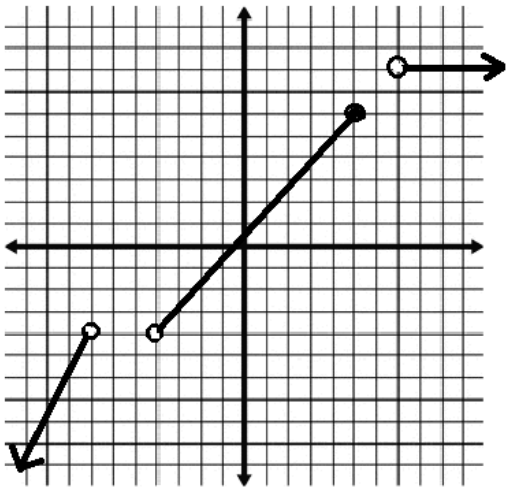
Name:

Unit 8 Enrichment

Directions: Answer each of the questions in this packet and show your work. You may use your notes, ask questions, work with another student, or go to the math lab to get help on this. You will be given a quiz based on these questions in which you will have to explain or interpret your answers.

1.) The graph of a function is graphed below.



Which value is not in the range of the function?

A.) 6 **B.)** 8 **C.)** -15 **D.)** -4

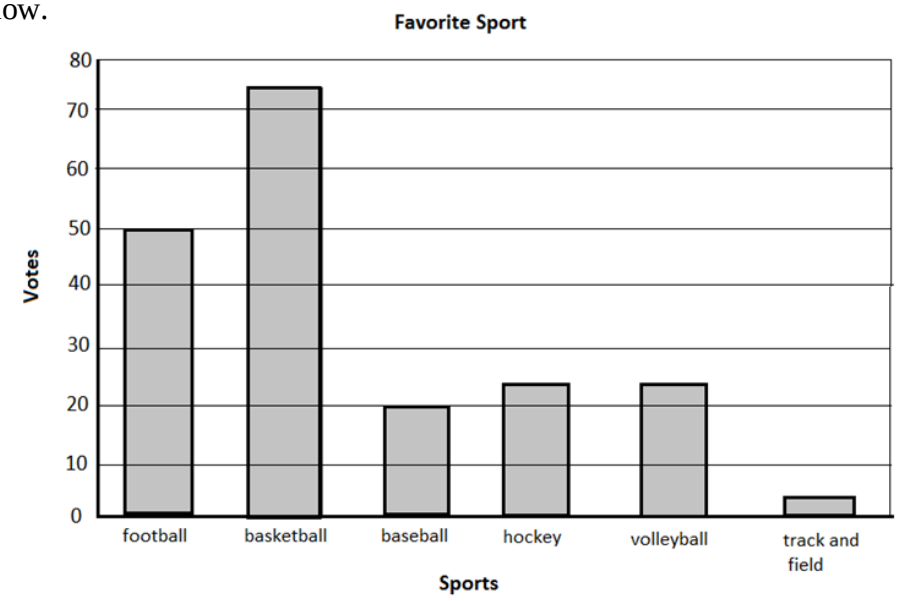
2.) The daily high temperatures, in degrees Fahrenheit (°F), of a town are recorded for one year. The median high temperature is 62°F. The interquartile range of high temperatures is 32. Which is **most likely** to be true?

A. Approximately 25% of the days had a high temperature less than 30°F
B. Approximately 25% of the days had a high temperature greater than 62°F
C. Approximately 50% of the days had a high temperature greater than 62°F
D. Approximately 75% of the days had a high temperature less than 94°F

3.) Mike discovered that the pool in his backyard is leaking slowly. The pool holds 18,410 gallons of water, and is leaking at a rate of 18 gallons per day. If Mike does not replace the water that has leaked from the pool, how many gallons of water will remain in the pool after 117 days?

A. 16,304 gallons
B. 18,527 gallons
C. 17,357 gallons
D. 20,516 gallons

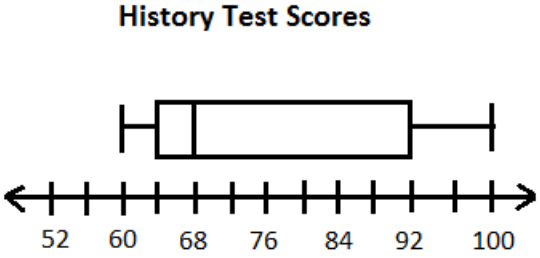
4.) Kim asked 200 students to select their favorite sport and then recorded the results in the bar graph below.



Kim will ask another 80 students to select their favorite sport. Based on the information in the bar graph, how many more students of the next 80 asked will select basketball rather than football as their favorite sport.

A.) 10 B.) 20 C.) 25 D.) 30

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



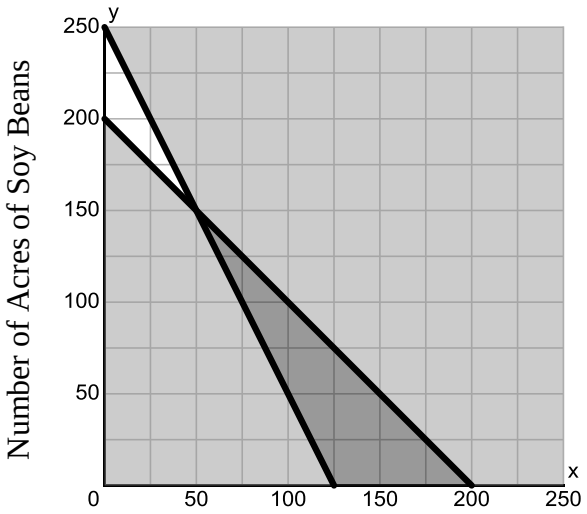
What is the **best** estimate for the percent of students scoring greater than 92 on the test?

A.) 8 B.) 25 C.) 50 D.) 10

6.) What is the first step in simplifying: 9^{-2}

A.) $-\frac{1}{9^2}$ B.) -9^2 C.) $\frac{1}{9^2}$ D.) $9(-2)$

7.) The following represents a farmer's analysis of planting two different types of crops, corn and soy beans.



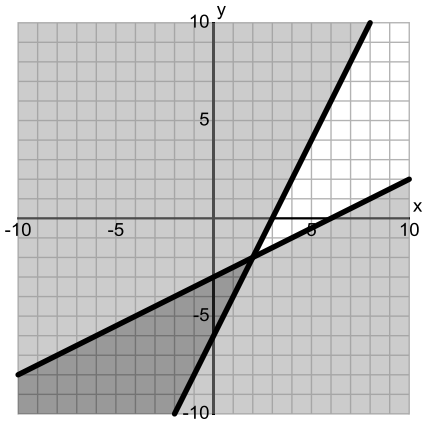
Number of Acres of Corn

Which of the following is NOT a solution of the system of inequalities?

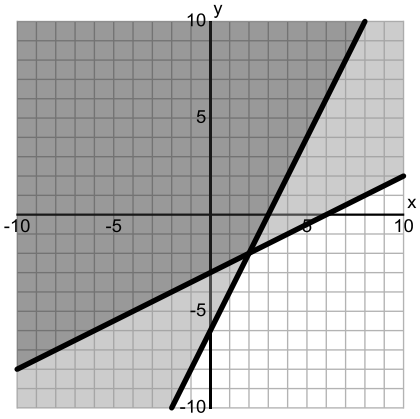
A. The farmer can plant 100 acres of corn and 50 acres of soy beans.
B. The farmer can plant 150 acres of corn and 25 acres of soy beans.
C. The farmer can plant 175 acres of corn and 50 acres of soy beans.
D. The farmer can plant 200 acres of corn and 0 acres of soy beans.

8.) Which graph represents the solution of the system $\begin{cases} 2x - y \geq 6 \\ x - 2y \leq 6 \end{cases}$?

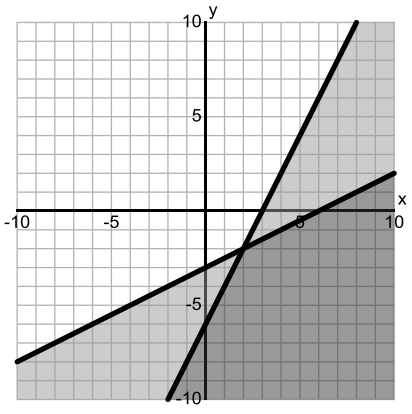
A.



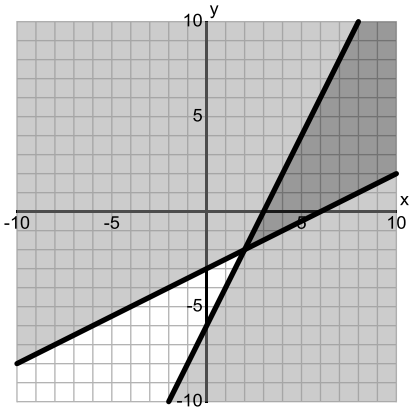
B.



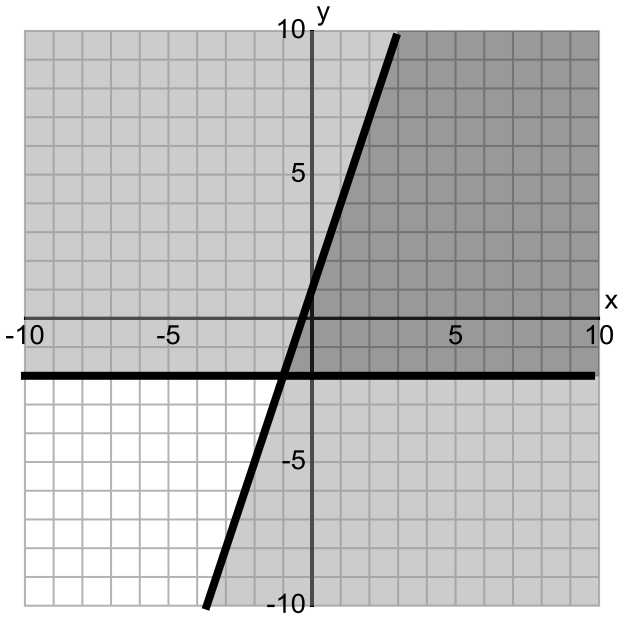
C.



D.



9.) Which system of inequalities is represented by the graph below?



A. $\begin{cases} y < 3x + 1 \\ x > -2 \end{cases}$

B. $\begin{cases} y > 3x + 1 \\ x > -2 \end{cases}$

C. $\begin{cases} y < 3x + 1 \\ y > -2 \end{cases}$

D. $\begin{cases} y > 3x + 1 \\ y > -2 \end{cases}$

10.) The table below shows the cost of renting a car (y) for a given number miles (x).

Miles Driven	**Cost to Rent**
24	$40
50	$53
66	$61
102	$79

Which of the following equations model the price to rent a car?

A.) $y = 13x + 40$

B.) $y = 1.66x + 40$

C.) $y = 0.5x + 40$

D.) $y = 0.5x + 28$