

Name: \_\_\_\_\_ Algebra IB Teacher: \_\_\_\_\_

## Unit 2 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. You may want to write notes on each problem as to what you did to get your answer.

1.) The hourly pay rates of employees at a bookstore are listed below.

|         |         |         |         |
|---------|---------|---------|---------|
| \$7.15  | \$7.50  | \$7.50  | \$7.75  |
| \$7.90  | \$8.00  | \$8.00  | \$8.00  |
| \$8.25  | \$8.60  | \$8.80  | \$9.00  |
| \$9.00  | \$10.20 | \$11.00 | \$11.15 |
| \$11.75 | \$16.00 | \$16.75 | \$19.25 |

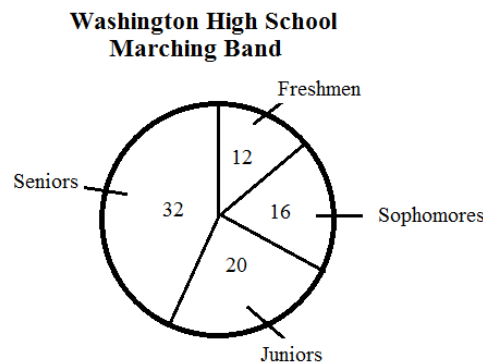
Which statement is **best** supported by this data?

- A.) One-fourth of the employees have an hourly pay rate less than \$7.95
- B.) Half of the employees have an hourly pay rate between \$8.00 and \$9.60
- C.) One-fourth of the employees have an hourly pay rate greater than \$11.75
- D.) Half of the employees have an hourly pay rate between \$9.00 and \$19.25.

2.) The median age of cars on a used car lot is 4 years. The lower quartile of ages of the cars is 2. The interquartile range of the cars' ages is 6 years. Which statement is most likely to be true?

- A.) About 25% of the cars will be less than 4 years old
- B.) About 25% of the cars will be more than 4 years old
- C.) About 50% of the cars will be between 4 and 6 years old
- D.) About 75% of the cars will be 8 or less years old.

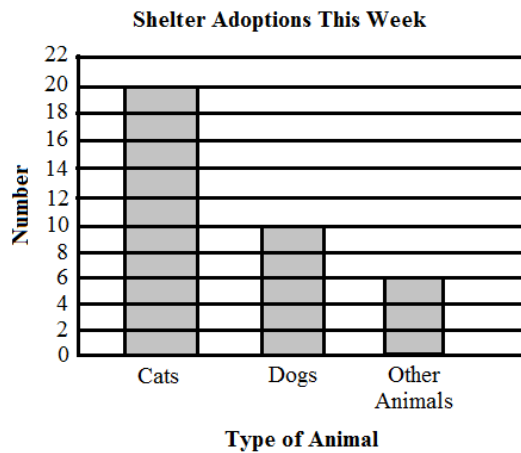
3.) The circle graph below shows the number of students at each grade level in one high school marching band.



Hoshi is in the marching band. What is the likelihood that she is a senior?

- A.) 32%
- B.) 40%
- C.) 52%
- D.) 68%

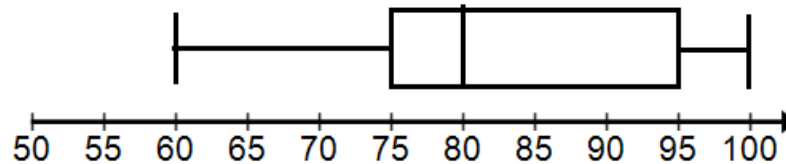
4.) The bar graph below show the numbers of different kinds of animals adopted from a shelter in one week.



If 50 animals are adopted next week, which is the **best** estimate of the number of dogs that will be adopted?

- A.) 10      B.) 14      C.) 20      D.) 28

The box-and-whisker plot below should be used to answer #5 and #6.



5.) The box-and-whisker plot above show the student scores on Ms. Smith's recent Algebra test.

Which of the following statements is true?

- A.) The range of the test scores was 50.  
 B.) Half of the students earned 85% or better.  
 C.) About 5% of the students earned between a 95% and 100%  
 D.) About 25% of the students earned between a 75% and 80%

6.) Use the box-and-whisker plot above. Ms. Smith has 28 students in her Algebra class. How many students earned between a 75% and 95%?

- A.) 7      B.) 14      C.) 20      D.) 25

7.) The table below shows the cost of renting a banquet room based on the number of hours the room is rented.

| Hours | Cost (\$) |
|-------|-----------|
| 1     | 205       |
| 2     | 285       |
| 3     | 365       |
| 4     | 445       |
| 5     | 525       |

Which of the following equations can be used to model the cost,  $c$ , to rent the room for  $x$  hours?

A.)  $C = 205x$

B.)  $C = 80x + 205$

C.)  $C = 80x + 125$

D.)  $C = x + 205$

8.) In a chemistry experiment, the temperature of a gas, in degrees Celsius, followed this pattern:

| Temperature of Gas                       |                                    |
|--|------------------------------------|
| Number of Seconds After Reaction ( $t$ ) | Temperature of Gas ( $^{\circ}C$ ) |
| 0  | 300                                |
| 1  | 285                                |
| 2  | 270                                |
| 3  | 255                                |

Which of these expressions describes the pattern?

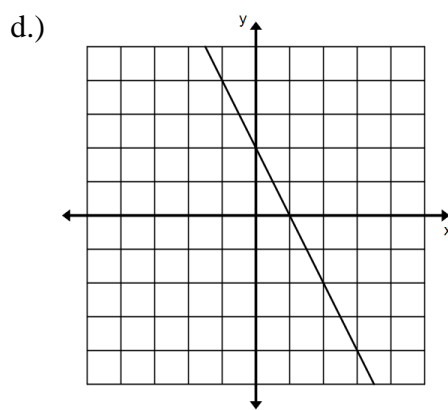
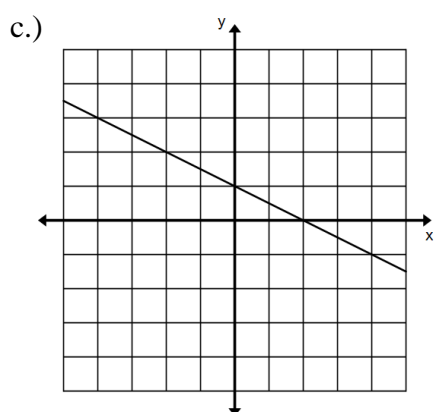
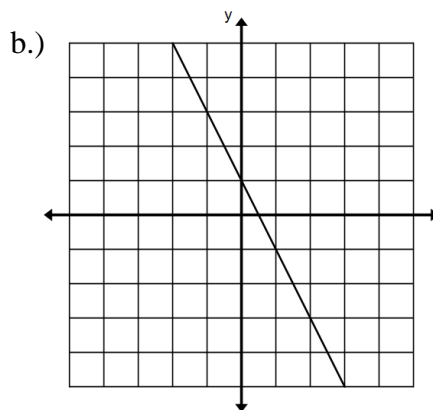
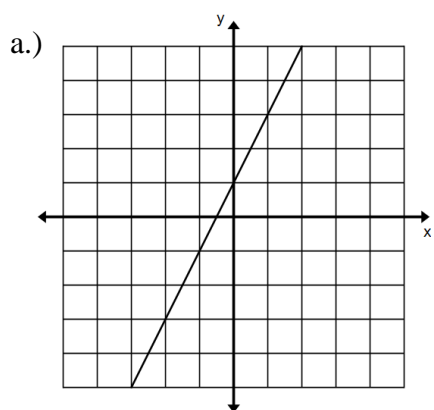
A.)  $300 - 15t$

B.)  $300 + 15t$

C.)  $300t - 15$

D.)  $300t + 15$

9.) In which graph does the line have a slope of -2 and a y-intercept of 1?



10.) Which statement is true of the equation below?

$$y + 4 = -2(x - 1)$$

- A.) The slope is 2 and the y-intercept is  $-1$
- B.) The slope is 2 and the y-intercept is 4
- C.) The slope is  $-2$  and the y-intercept is  $-1$
- D.) The slope is  $-2$  and the y-intercept is  $-2$