

Name _____

Algebra 1 B Teacher _____

Unit 10 Enrichment Assignment

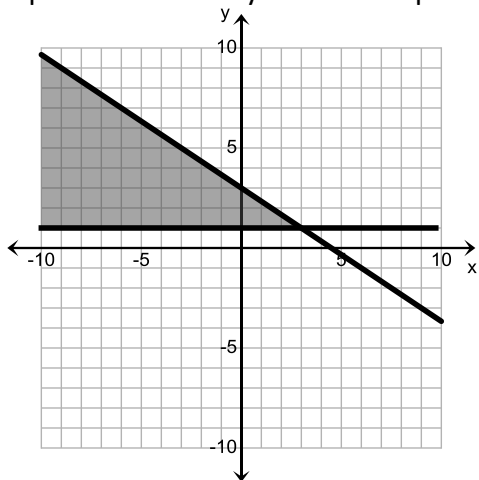
Directions: Answer each of the questions in this packet and show your work. You may use your notes, ask questions, work with another student, or go to the math lab to get help on this. You will be given a quiz based on these questions in which you will have to explain or interpret your answers.

Use this space to show work.

1. Simplify this expression: $8\sqrt{294}$

A. $7\sqrt{6}$ B. $56\sqrt{6}$
C. $15\sqrt{6}$ D. $392\sqrt{6}$

2. The graph represents which system of inequalities?



A. $y > 1$
 $y \leq -\frac{3}{2}x + 3$ B. $y \leq 1$
 $y > -\frac{2}{3}x + 3$
C. $y > 1$
 $y \leq \frac{2}{3}x - 3$ D. $y > 1$
 $y \leq -\frac{2}{3}x + 3$

3. Simplify the following: $(7x^2 + 5x - 6) - (3x^2 + 8x - 9)$

A. $4x^2 - 3x + 3$ B. $4x^2 - 15$
C. $4x^2 + 13x - 15$ D. $4x^2 + 13x + 3$

Use this space to show work.

4. Simplify the following: $(3x - 2)^2$
- A. $9x^2 - 4$ B. $9x^2 + 4$
C. $9x^2 - 12x + 4$ D. $9x^2 - 12x - 4$
5. Mr. Turner bought x boxes of pencils. Each box holds 25 pencils. He left 3 boxes of pencils at home and took the rest to school. Which expression represents the total number of pencils he took to school?
- A. $22x$ B. $25x - 3$
C. $25 - 3x$ D. $25x - 75$
6. Jenny has a job that pays her \$8 per hour plus tips (t). Jenny worked 4 hours on Monday and made \$65 in all. Which equation could be used to find t , the amount Jenny made in tips?
- A. $65 = 4t + 8$ B. $65 = 8t \div 4$
C. $65 = 8t + 4$ D. $65 = 8(4) + t$
7. Erica and Mary purchased flowers. Mary purchased 6 roses for x dollars each and 4 daisies for y dollars each and spent \$26 on the flowers. Erica purchased 1 rose for x dollars and 6 daisies for y dollars each and spent \$15. The system of equations shown below represents this situation.

$$\begin{cases} 6x + 4y = 26 \\ x + 6y = 15 \end{cases}$$

Which statement is true?

- A. A rose costs \$1 more than a daisy. B. Mary spent \$4 on each daisy.
C. Mary spent more on daisies than she did on roses. D. Mary spent over 4 times as much on daisies as she did on roses.

Use this space to show work.

8. Which of the following inequalities is true for **all** real values of x ?

A. $x^3 \geq x^2$ B. $3x^2 \geq 2x^3$
C. $(2x)^2 \geq 2x^2$ D. $3(x - 2)^2 \geq 3x^2 - 2$

9. An expression is show below.

$$\sqrt{87x}$$

For which value of x should the expression be further simplified?

A. $x = 10$ B. $x = 13$
C. $x = 21$ D. $x = 38$

10. Mr. Schuler always leaves a tip of between 8% and 20% for the server when he pays for his dinner. This can be represented by the system of inequalities shown below, where y is the amount of tip and x is the cost of dinner.

$$\begin{cases} y > 0.08x \\ y < 0.2x \end{cases}$$

Which of the following is a true statement?

- A. When the cost of dinner (x) is \$10, the amount of tip (y) must be between \$2 and \$8
B. When the cost of dinner is (x) is \$15, the amount of tip (y) must be between \$1.20 and \$3.00
C. When the amount of tip (y) is \$3, the cost of dinner (x) must be between \$11 and \$23
D. When the amount of tip (y) is \$2.40, the cost of dinner (x) must be between \$3 and \$6