Unit 4 Test Review

1. Simplify:

*(3x3 – 9) – (8x2 + 10x – 7)*

1. Solve for x:

*25x + 2 = 18x + 18x +7*

1. When factored completely, which is a factor of *2x3 − 6x2 − 8x*?
2. *(2x – 6)*
3. *(4x + 1)*
4. *(x + 4)*
5. *(x – 4)*
6. Solve for x:

*3(x – 6) = -2x + 13*

1. Expand to show that *(x2)5= x7.*
2. Multiply:

*(3*x *− 4)(5*x*2 + 2*x *− 12)*

1. Solve for x:

*10x + 3 = 2x – 8x +4*

1. Which is the correct first step in solving

*2x + 5x – 9 = (2 + 3x) + 2x*? Additionally, what property justifies that step?

A. *2x + 5x – 9 = 2 + (3x + 2x)*

B. *2x + 9 – 5x = (2 + 3x) + 2x*?

1. A business has fixed costs of $1,275.00 each month and a cost of $4.50 for each item it produces. Write an equation to determine the total production costs for the business if it produced *x* items last month?  
   *(Let x represent the number of items the business produced last month and y represent the total production costs)*
2. A mail courier charges a base fee of $3.25 plus $4.10 per package being delivered. If *x* represents the number of packages delivered, write an equation to find *y*, the total cost of mailing packages.
3. A used car cost $2,500.00. If the price paid includes a 5% discount, write an equation to find the price of the car before the discount.  
   (Let *x* represent the cost of the car and *y* represent the total cost before the discount.)
4. Solve for x:

*6x = 7 – 8x*

1. Jen has a beaker of pink liquid and adds drops of yellow liquid at a constant rate. The equation y *= 2*x *+ 10* shows the relationship between the number of minutes (x) since she began adding drops of yellow liquid to the beaker and the total amount of liquid in the beaker (y), in milliliters. What is the total amount of liquid in the beaker after 3 minutes?
2. Factor:

*-0.2x2 – 0.8x + 6.4*

1. Max is weighing a bag filled with items. The weight of each item is 2 grams and the weight of the empty bag is x grams. There are 34 items in the bag and total weight of the items and the bag is 115 grams. Write an equation to find x, the weight of the empty bag.
2. Solve for x:

*2(x + 1) + 4(x + 1) = 3x + 6*

1. Solve for x:

*2(5x – 4) = 14x*

1. Solve for x:

1. Which property justifies the first step?

*2x + (2x + 4) = 13*

*(2x + 2x) + 4 = 13*

*4x + 4 = 13*

1. Sam purchased x child tickets and y adult tickets for an event. She spent a total of $86. The equation below describes the relationship between the number of child tickets and the number of adult tickets purchased.

*5x + 8y = 85*

The ordered pair (9, 5) is the solution to the equation. What does the solution (9, 5) represent?

1. Solve for x:

*3x – 1 = 2x + 3x + 6*

1. Solve for x:

8x – 9 = 3x + 11

1. Bob sells cars and receives a monthly salary of $2,325.00 and a $210.00 commission on each car he sells. If he receives his commission check at the end of the month along with his salary check, write an equation to determine his total pay for the month.*(Let x represent the number of policies sold and y represent the total amount of pay for the month.)*