**Review of Unit 1 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Lesson 1**

1. Patrick earns $11 commission for every pair of sneakers that he sells. If he sells 8 pairs of sneakers in one day, what is the amount of commission that he earns?

**Lesson 2**

2. *Suppose you want to construct a movie theater in your town. It is often the case that rows closer to the screen have less seats than the rows farther away from the screen. An example of the seating arrangement is below*

*(a* Assuming this pattern continues, fill out the table below *(b) Katie tries to mathematically model the number of seats in any row. This is the equation she came up with: S = 2R + 3, where S is the number of seats in row, R. Does this equation work for R = 1? R = 2? Show your work to support your answers.  
(c) The correct equation is S = 3R+2.*  ***Verify*** *this equation matches your table for R = 2, R = 4 and R = 5.*

|  |  |
| --- | --- |
| **Row , R** | **Number of Seats, S** |
| **1** | **5** |
| **2** | **8** |
| **3** |  |
| **4** |  |
| **5** |  |
| **6** |  |
| **7** |  |
| **8** |  |

*(d) According to the formula for part ( c ), how many seats are in the 21st row?*

*(e) In what row are there 77 seats? Show your work for this.*

Row 3

Row 2

Row 1

3. Evaluate the following expressions for the values of x given. Show the steps in your calculation:

a.  x = 4 b.  when x = 3

**Lesson 3**

4. Using order of operations evaluate the following numerical expressions.

a. 33 – 4(6) b. (7 – 2)(6 + 3)

5. Mrs. Waterbury made an answer key to a quiz she gave, but made a mistake on one of the questions. The work she did for one of the questions is below.

a. Read through the questions and Mrs. Waterbury’s work. Find and circle her mistake.

**Evaluate:** 2x2 + 3(x+6) when x = -4

**Mrs. Waterbury’s work:**

= 2x2 + 3(x+6)

= 2(-4)2 + 3(-4+6)

= (-8)2 + 3(2)

= 64 + 6

= 70

b. Explain what she did wrong and what she should have done.

c. Show Mrs. Waterbury how you would evaluate the expression correctly. State the correct value.

**Lesson 4**

6. Simplify the following expressions using the distributive property

a. x(2x + 3) b. -3(5x – 2) c. 6 (2x -7)

d. -2(3x + 4) e. x(5x + 1) f.

g. h

**Lesson 5**

7. Is (x +2)(3x+1) equivalent to 3x2+7x+2 or 3x2+2? Explain your choice.

8. Which of the following is equivalent to ?

1. 2x – 1
2. 2x – 7
3. 2x – 3
4. 3x – 6

9. Factor 5x – 35

10. What is the ratio between 5x – 10 and x – 2?

**Lesson 6**

11. The expression 3x + 1 is equal to 8 for some value of x. (don’t solve). Using this information find the value of each of the following expressions

1. 9x + 3 b. 3x + 10 c. 6x + 10

**Lesson 7**

Laws of exponents

1. (-3x4)\* (5x5) 13. 2x7\*5x9
2. 12a12\*3a3 15. (3x4)3
3. If 4x2=7 then 16x4= (what number) (Hint: Use structure in the equation 4x2=7.)

**Lesson 8:**

Express as a trinomial

1. x(x+5)-4(x+5)

**Various lessons**

1. Match the expressions in the left column to their Equivalent expressions in the right column.
2. (x+3)2 a.\_\_\_\_\_\_\_\_x2+32
3. X2-9 b.\_\_\_\_\_\_\_\_ (x-3)2
4. X2-6x+9 c.\_\_\_\_\_\_\_\_ (x+3)(x-3)
5. X2+9 d.\_\_\_\_\_\_\_\_ x2+6x+9

**Lesson 9**

Express as the product of two binomials.

1. 4x(x+4)+3(x+4)
2. If (x+4) =7, What is the numerical value of the expression x(x+4)+4(x+4)?

**Lesson 10**

1. If n represents a number, write an expression that represents two more than three times the number.
2. If n represents a number, write an expression that represents 1 less than twice the number.

**Lesson 11**

1. If n represents a number, write an expression that represents the sum of one more than three times the number and 4 times the number.

Evaluate for the following numbers for the expression you created.

|  |  |  |
| --- | --- | --- |
| n | Calculation | Result |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |