

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Lesson 2 Assessment

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1. If possible, simplify each of the following by combining like terms or using properties of exponents.

a)  $2n^5 + 3n^5 =$  \_\_\_\_\_

b)  $2n^5 \cdot 3n^5 =$  \_\_\_\_\_

c)  $3n^3 + 3n^5 =$  \_\_\_\_\_

d)  $3n^3 \cdot 3n^5 =$  \_\_\_\_\_

2. The functions  $A$  and  $B$  are defined by the following tables

$x$	-3	-2	0	1	4	5	8	10	12
$A(x)$	8	6	3	2	5	8	11	15	20

$x$	0	2	3	4	5	8	9	11	15
$B(x)$	1	3	5	10	4	2	0	-2	-5

Determine the values for each of the following.

a)  $B(3) =$  \_\_\_\_\_

b)  $A(8) =$  \_\_\_\_\_

c)  $A(0) + B(0) =$  \_\_\_\_\_

d)  $A(8) - B(8) =$  \_\_\_\_\_

e)  $A(4) \cdot B(4) =$  \_\_\_\_\_

f)  $\frac{A(5)}{B(5)} =$  \_\_\_\_\_

3. Let  $p(x) = x^2 + 2x + 3$  and  $r(x) = x - 5$ . Determine each of the following. Show all work. Box your answers.

a)  $p(x) - r(x) =$

b)  $p(0) \cdot r(0) =$

c)  $p(-2) + r(-2) =$

d)  $r(7) - p(7) =$

4. A resort hotel charges \$2200 to rent a reception hall, plus \$65 per person for dinner and open bar. The reception hall can accommodate up to 200 people.

- a) Write a function,  $T$ , to represent the total cost to rent the reception hall if  $n$  people attend the reception.

$$T(n) = \underline{\hspace{2cm}}$$

- b) During the summer months, the hotel offers a discount of 10% off the total bill,  $T$ . Write a function,  $D$ , to represent the discounted cost if the total bill was  $T$ .

$$D(T) = \underline{\hspace{2cm}}$$

- c) Using the information above, write a formula for  $D(T(n))$  and complete the table below.

$$D(T(n)) = \underline{\hspace{2cm}}$$

$n$	0	50	100	150	200
$D(T(n))$					

- d) What information does the function  $D(T(n))$  provide in this situation? Be sure to identify the input and output quantities.
- e) Interpret the meaning of the statement  $D(T(80)) = 6660$ . Include all appropriate units.
- f) Determine the maximum number of people that can attend the reception for \$10,000 (after the discount is applied)?