Homework 3.3: Properties of Logarithms Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Math 3

***Directions:*** *Expand each of the following logarithms.* The word log will be used ***repeatedly*** in each problem.

1. logb x2y3z
2. 
3. log6 3x
4. log2 
5. log10 xy2
6. log4 
7. log5 2
8. 
9. log x1/2yz

***Directions:*** *Condense each of the following logarithms.* The word log will be used ***once*** in each problem.

1. 
2. 
3. log3 8 - log3 2
4. 2 log5 4 + log5 3
5. log4 5 + log4 3 + log4 1
6.  log10 24 – log10 4
7. log3 4 + 2 log3 x – log3 5
8. log2 x – 2 log2 y
9. 3loga 2 + loga 27 - loga 16

***Directions:*** *Solve each of the following logarithmic equations. Remember to CONDENSE before you solve!*

1. log5 x = 3 log5 2
2. log 4 x = log 4 15 – log 4 3
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
11. log10 x + log 10 3 = log10 12
12. log3 16 = log3 x