Math 3H Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10.2 Expand and Condense Logarithms Period \_\_\_\_\_\_\_\_\_\_\_\_\_

**Part 3:**

Expand the following expressions.

1.  2.  3. 

4.  5.  6. 

7.  8.  9. 

10.  11.  12. 

Condense the following expressions.

13.  14.  15. 

16.  17.  18. 

19.  20.  21. 

22.  23.  24. 

Use the change-of-base formula and your calculator to evaluate each logarithm.

25.  26.  27. 

28.  29.  30. 