MATH 1650: SECTION 6.5: SOLVING EQUATIONS INVOLVING LOGARITHM FUNCTIONS

STRATEGY FOR SOLVING EQUATIONS INVOLVING LOGARITHM FUNCTIONS:

1. Isolate the logarithm function.
2. (a) If convenient, express both sides with a common base and the arguments (insides) of the logs.
   (b) Otherwise, rewrite the log equation as an exponential equation.
3. Since some manipulations involving logs may change the domain of the functions involved, be sure to **check** your solutions in the **original** given equation.

EXAMPLE: Solve the following equations. Check your answer using a graphing utility.

1. $\log_{117}(1-3x) = \log_{117}\left(x^2-3\right)$

2. $2 - \ln(t-3) = 1$

3. $\log_6(x+4) + \log_6(3-x) = 1$

4. $\log_7(1-2t) = 1 - \log_7(3-t)$

5. $\log_2(x+3) = \log_2(6-x) + 3$

6. $1 + 2\log_4(t+1) = 2\log_2(t)$

   HINT: Change $\log_4(t+1)$ to base 2 ...

HOMEWORK: Section 6.5: 1 - 23 odd.