Name: _____

Score: _____ /15

Homework 7 (Due Thurs, May 22)

Math 1060Q – Summer 2014

Professor Hohn

Answer the following questions. Homework will be partially graded for completeness.

1. Find all numbers x that satisfy
$$\log_3(x - 2) = 3.$$

2. Find all numbers x that satisfy
$$\ln x = -1.$$

3. Find all numbers x that satisfy
$$\log_4(\ln x) = 2.$$

4. Find all numbers x that satisfy
$$\log_2(x + 1) - \log_2(x - 1) - 3 = 0.$$

5. Find all numbers x that satisfy

$$\log_4(x + 7) - \log_4(2x - 1) = 2.$$

6. Find all numbers x that satisfy

$$\log_3(x + 5) + \log_3(x - 1) = 2.$$

7. Find all numbers x that satisfy
$$2 \cdot 4^{x+1} 4^{3x} = 10.$$

8. Find all numbers x that satisfy
$$x - x \ln x = 0.$$

9. Find all numbers x that satisfy

$$\log_3 x = 3 - \log_3(x + 6).$$

10. Find all numbers x that satisfy

$$2^{x+1} + 2^x = 5.$$

Hint: Factor out 2^x. Recall that $2^{x+1} = 2^x \cdot 2$.

11. Find all numbers x that satisfy
$$6^{2x+1} = 5.$$

12. Find a formula for the inverse of the function f defined by
$$f(x) = 4 + 5\log_4(7x + 2).$$