

Name: _____

Aim: How do we solve logarithmic equations?

I. Do Now:

1. Evaluate:

$$\log_{16} 8$$

2. Solve and check:

$$3(4^x) - 2 = 22$$

3. Evaluate:

(a) $10^{\log 1000}$

(b) $10^{\log(\frac{1}{100})}$

II. Key Theorem:

III. Motivation: How do we solve the equation $\log x = 6$?

IV. Solve and check:

4. $2\log 5x = 4$

5. $5 + 2\log x = 4$

6. $\log\left(\log\frac{x}{8}\right) = 0$

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

8. $\log_4 x - \log_4(x-1) = \frac{1}{2}$

9. $\log_4(2x+1) = \log_4(x+2) - \log_4 3$

10. $\log_2(x^2 - 6x) = 3 + \log_2(1-x)$

(if time)

11. $\log(x-3) + \log(x-2) = \log(2x+24)$

HW11

p. 217: 8, 35, 107, 108

p. 207: 14, 25, 60, 74, 83, 95