Algebra 2: 7.6 Notes – Solving Logarithmic Equations with Condensing

Warm-up: 1) Condense the following.

$$2\log_7(3x) + \log_7 5 - \log_7 x$$

2) Solve the equation.

$$\log_5(2x-1) = 3$$

Example 1) Solve each equation and check your answers.

a. $2\log_3 x - \log_3 4 = \log_3 25$

b. $\log_6(2x-5) + 1 = \log_6(7x+10)$

c. $\log_2 x + \log_2 (x+2) = 3$

d. $4\log_2 x - \log_2 5 = \log_2 125$

e. $\log_3 (c+3) - \log_3 (4c-1) = \log_3 5$

f. $\log_8 x - 2 = -\log_8 (x-12)$