Act. #95

"Solving logarithms using Condensing.

* Solve the following:

1. $\log_2(x+5) - \log_2(3x-1) = \log_2 3$

2. $\log_4 7 + \log_4 x = 3$

3. $\log_5 3 + \log_5(x-7) = \log_5 4 + \log_5(2x+6)$

4. $\log_2 x - \log_2 5 = \log_2 6 + \log_2 3$

5. $\log_3 x + \log_3(x-1) = \log_3 6$

6. $\log_3 5 + \log_3 2 + \log_3 x = \log_3 20$

7. $\log 4 + \log 3 - \log x = \log 11$

8. $\frac{1}{2}\log 9 - \log x = 2$

9. $\frac{1}{3}(\log_2 27 + \log_2 64) = \log_2 4 + \log_2 x$

10. $2\log_8 x - \log_8 4 = 2$

11. $\log 2x + \log(x+5) = \log(3x+15)$

12. $\log_{13}(x-1) - \log_{13}(4) = \log_{13} 6 - \log_{13}(x+1)$

AFM

Act. #95 (con't)

* Solve the following by condensing first....

(13) $\frac{1}{2}\log_5 25 + \log_5 x - \frac{1}{3}\log_5 64 = 2$

(14) $2\log x - 3\log x = \log 5 - \log 9$

(15) $\log_2 x + \log_2 (x+4) = 2\log_2 x + \log_2 7$

(16) $\frac{1}{5}(\log 32 - \log 243) = 2\log x - \log 6$

(17) $\log_{2x} 500 = 2$

(18) $\log_3 4 - (\log_3 x + \log_3 10) = \log_3 x - \log_3 2$

(19) $\log_4 (2x^2 + 11x) = \log_4 40$

(20) $3\log_7 x = \log_7 2 + 2\log_7 x$

(21) $\log_2 8192 = x$

* (22) $\frac{1}{6}\log 64 - \log(x+1) = \log(x+1) - \log 3$

* Will have to use Quadratic Formula to solve.

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$