Name: _____ Date: _____
PCH: Review of Algebra 2 Log Topics Ms. Loughran

Do Now:

Solve each equation.

1. $2\log x + \log 5 = \log 125$
2. $\log(x+3) + \log(x-2) = \log(x-5) + \log(x+2)$
3. $\log(x-4) - \log(x+1) = \log 6$
4. $\ln 3 - \frac{1}{3}\ln x = 0$
5. $\log(x^2 - 21x) = 2$

Classwork

For each given function, state the domain and range, the equation of any asymptotes and the coordinates of any intercepts.

1. $y = e^x + 1$
2. $y = e^{x+1}$
3. $y = -e^x$
4. $y = e^{-x}$
5. $y = \ln x - 1$
6. $y = \ln(x-1)$
7. $y = -\ln x$
8. $y = \ln(-x)$

9. If $\log n = 1 + \log 2$, then n is equal to:
(A) 12 (B) $\log 10 + \log 2$ (C) 2 (D) 20

10. If $x = (\log_8 2)(\log_2 8)$, find $\log_3 x$ without using your calculator.

11. Find the value of: a) $e^{\ln 5}$ b) $10^{\log 5}$

For 12 – 25, solve for x without using your calculator.

12. $3^{\ln x} = 3$

13. $5^{\ln x} = 25$

14. $(\log_3 9)(\log_9 3) = x$

15. $(\log_5 7)(\log_7 5) = x$

16. $(\log_3 9)(\log_9 81) = x$

17. $(\log_2 3)(\log_3 4) = x$

18. $(\log_8 9)(\log_3 64)(\log_{27} 3) = x$

19. $\log_2(\log_3 x) = 4$

20. $\ln(\ln x) = 0$

21. $\log_2(\log_4 x) = 1$

22. $\log_5(\log_3 x) = 0$

23. $\log_4(\log_3(\log_2 x)) = 0$

24. $\log_2(\log_3(\log_5 x)) = 0$

25. $\log(\log_6(\log(\log x))) = 0$

26. Given that $\log 2 = a$ and $\log 3 = b$, find the following in terms of a and/or b.

(a) $\log 6$ (b) $\log \frac{2}{3}$ (c) $\log 12$ (d) $\log 1800$

(e) $\log \frac{1}{2}$ (f) $\log 5$ (g) $\log \frac{1}{3}$ (h) $\log 36$