Algebra 2H

Chapter 7 Review

1. Graph and state the domain and range.
$$f(x) = \frac{1}{4}(3)^{(x+1)} + 2$$

2. Graph and state the domain and range.
$$g(x) = \log_3(x - 2) + 1$$

Find the inverse of the following

3. $y = 3e^{x-2} + 1$
4. $y = \log(x + 2) - 1$

5. Condense
a). $\frac{1}{2}\ln 100 - 2\ln(y - 3) + 8\ln(y^2 - 6y + 9)$
b). $2(\log_3 20 - \log_3 4) + \frac{1}{2}\log_3 4$

6. Expand
a). $\log_3 \sqrt{10x}$
b). $\ln \frac{5x^2}{(y^3 - 8)}$

Solve the equations. If necessary, check for extraneous solutions.

7. $e^{2x+1} = e^{3x-2}$
8. $2^{x+2} = 3^{x-4}$
9. $\log_3 4 = \log_9(2x + 1)$
10. $\log_2 x + \log_2(x - 7) = 3$
11. $2^{4x+2} = 8^{x+2}$
12. $7^{9x} = 18$
13. $\ln x + \ln x = 0$
14. $\log_5(3x + 2) = 3$
15. $\log_6(x + 9) = -\log_6 x + 2$
16. $4e^{-2x} = 17$

17. You deposit $3000 in a bank account. Find the balance after 10 years if the account pays 3.5% annual interest compounded quarterly.

18. You deposit $3500 in an account that pays 7.4% annual interest compounded continuously. How long will it take to double your money?

19. Write and exponential function $y = ab^x$ whose graph passes through $(2, -9)$ and $(5, -243)$.

20. Write a power function $y = ax^b$ whose graph passes through $(3, 27)$ and $(6, 432)$.