Algebra II Worksheet #6 Unit 11 page 1 _____

Solve for x. Express your solutions rounded to the nearest hundredth.

1. $e^{x} = 5$
2. $e^{2x} = 10$
3. $e^{(x-3)} = 100$
4. $e^{(3x+1)} = 2$
5. $e^{x} = 50$
6. $e^{(5x+1)} = 600$
7. $2^{x} = 25$
8. $7^{x} = 3$
9. $5^{x} = 0.3$
10. $6^{(2x+1)} = 350$
11. $3^{(5x-4)} = 75$
12. $6^{(2x+1)} = 4^{(x+3)}$
13. $\ln x = 3$
14. $\ln x = -1$
15. $\ln x = 3.1$
16. $\log_{3} x = 1.25$
17. $\log_{2} x = 7.5$
18. $\log_{5} x = -1.2$
19. $\log x = 1.75$
20. $\log x = -3.5$
21. $\log x = -0.5$

Algebra II Worksheet #6 Unit 11 page 2

Use the change of base formula to find each of the following logarithms. Express your answers rounded to the nearest hundredth.

22. $\log_3 5 =$ _____

23. $\log_4 100 =$ _____

24. $\log_2 75 =$ _____

25. $\log_8 3 =$ _____

26. $\log_5 3000 =$ _____

27. $\log_3 90 =$ _____

Solve the following problems.

28. Money is deposited in an account that pays interest at an annual rate of 3% compounded monthly. How long will it take for the value of the account to double? Express your answer rounded to the nearest tenth of a year.

29. Money is deposited in an account that pays interest at an annual rate of 4.5% compounded daily. How long will it take for the value of the account to triple? Express your answer rounded to the nearest tenth of a year.

30. Money is deposited in an account that pays interest at an annual rate of 5% compounded continuously. How long will it take for the value of the account to double? Express your answer rounded to the nearest tenth of a year.

31. Money is deposited in an account that pays interest at an annual rate of 2.5% compounded continuously. How long will it take for the value of the account to triple? Express your answer rounded to the nearest tenth of a year.