Algebra 2

(LE) UNIT 7 REVIEW

Name_____ Hr.___

REVIEW from unit 6: For Questions 1-4, solve each equation. Round to four decimal places.

1. $2^x = 53$

2. $6^{3y+3} = 8$

3. $6^{n+4} = \frac{1}{6}$

4. $10^{3n+1} = \frac{1}{100}$

For Questions 5-7, express each logarithm in terms of common logarithms.
(Then approximate its value to four decimal places.)

5. $\log_4 11$

6. $\log_2 15$

7. $\log_{20} 1000$

For Questions 8 and 9, write an equivalent exponential or logarithmic equation.

8. $e^x = 6$

9. $\ln 7.4 = x$

For Questions 10 and 11, evaluate each expression.

10. $e^{\ln 12}$

11. $\ln e^{7x}$

For Questions 12-15, solve each equation. Round to four decimal places if necessary.

12. $2e^x - 4 = 1$

13. $-4e^{2x} + 15 = 7$

14. $\ln(x - 10) = 0.5$

15. $\ln x + \ln 4x = 10$

For Questions 16-18, write an equation to model the situation. Then, answer the question.

16. If $850 is invested at an annual interest rate of 6% compounded continuously, how much money will be in the account after 10 years?

Equation: _____

Answer: _____

17. If Sarita deposits $1000 in an account paying 3.4% annual interest compounded continuously, what is the balance in the account after 5 years?

Equation: _____

Answer: _____

18. How long will it take the balance in Sarita's account (see Question 17) to reach $2000?

Equation: _____

Answer: _____

19. A group of bacteria doubles every 15 minutes. How much bacteria will be present if 45 grams of bacteria sits for 3 hours?

Equation: _____

Answer: _____

20. How many hours will it take a culture of bacteria to increase from 20 to 2000 if the growth rate per hour is 85%?

Equation: _____

Answer: _____