

Name: _____

Date: _____

Block: _____

Unit 7: Exponents and Logs Review

Directions: Convert to the specified form. **CIRCLE YOUR FINAL ANSWER**

Convert to Logarithmic Form:

Convert to Exponential Form:

1. $2^x = 8$

6. $\log_2 4 = x$

2. $2^x = 1024$

7. $\log_3 9 = x$

3. $2^x = 64$

8. $\log_2 256 = x$

4. $2^x = 32$

9. $\log_2 512 = x$

5. $10^x = 0.000001$

10. $\log_2 4056 = x$

Directions: Simplify the following. **CIRCLE YOUR FINAL ANSWER.**

11. $(5^{12}) + (5^{35})$

16. $(4c^3)^2$

12. $(4x^3y^2) - (2x^3y^2) + (3x^2y^2)$

17. $(-6h^4k^5)^3$

13. $(6c^4)(-3c^2d^2)$

18. $\left(\frac{-2s^8}{t^2r^4}\right)^3$

14. $(-3x^3z)(-2y^3z)(-4xyz)$

19. $\left(\frac{3d^5}{6d^3}\right)^3$

15. $(6^2)^4$

20. $\frac{a^4b^4c^4}{-a^2b^3c^6}$

Directions: Solve for the variable. Round to the nearest hundredth if necessary. **CIRCLE YOUR FINAL ANSWER.**

21. $4^2 = x$

26. $\log_3 243 = x$

22. $5^6 = y$

27. $\log_2 17 = x$

23. $6^x = 216$

28. $\log_3 7 = x$

24. $7^x = 2401$

29. $\log 1,000,000 = x$

25. $\log_2 16 = x$

30. $\log 0.001 = x$

Directions: Solve the following. Round to the nearest hundredth if necessary. **CIRCLE YOUR FINAL ANSWER.**

31. Suppose that a radioactive isotope decays so that the radioactivity present decreases by 20% per day. If 50 kg are present now, find the amount present 8 days from now.

32. If grocery prices increase 2% per month for a whole year, how much would groceries that cost \$50 at the beginning of the year cost at the end of the year?

33. An investor is comparing two investment plans:

- a. Plan A: An 6% annual rate compounded quarterly for 5 years.
- b. Plan B: A 4.5% annual rate compounded daily for 5 years.

Which plan would the investor go with because he would earn more money on the investment?