## Unit 7: Exponents and Logs Review

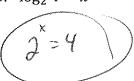
Directions: Convert to the specified form. CIRCLE YOUR FINAL ANSWER

Convert to Logarithmic Form:

$$1. \quad 2^x = 8$$

$$\log_{\theta} 8 = x$$

6. 
$$\log_2 4 = x$$



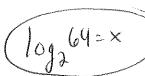
Convert to Exponential Form:

2. 
$$2^x = 1024$$

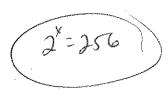
7. 
$$\log_3 9 = x$$



3. 
$$2^x = 64$$



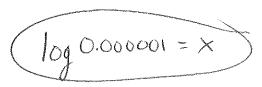
8. 
$$\log_2 256 = x$$



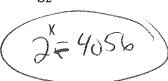
4. 
$$2^x = 32$$

9. 
$$\log_2 512 = x$$

5. 
$$10^x = 0.000001$$



$$10.\log_2 4056 = x$$



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

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

$$5'' + 5^{-35}$$

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

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

$$2x^3y^2 + 3x^2y^3$$

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

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

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

$$-85$$

$$+6$$

$$18$$

$$19. \left(\frac{3d^5}{6d^3}\right)^3 = \frac{d^5}{8}$$

$$6^{8} - 1679616$$

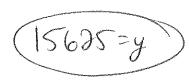
$$20. \frac{a^4b^4c^4}{-a^2b^3c^6}$$

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

$$21.4^2 = x$$



22. 
$$5^6 = y$$



$$23.6^x = 216$$

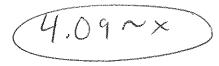
$$24.7^{x} = 2401$$

25. 
$$\log_2 16 = x$$

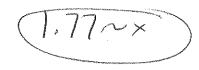
$$26. \log_3 243 = x$$



$$27.\log_2 17 = x$$



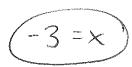
28. 
$$\log_3 7 = x$$



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



$$30.\log 0.001 = x$$



## **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.

$$A = 50(1-0.20)^8$$
 $A = 8.39 \text{ kg}$ 

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?