

ANSWERS

MORE PRACTICE: Logarithms

Write each equation in logarithmic form:

1. $3^x = 27$

$$x = \log_3 27$$

2. $64 = 4^x$

$$x = \log_4 64$$

3. $5^p = w$

$$p = \log_5 w$$

4. $300 = b^5$

$$5 = \log_b 300$$

5. $d = 10^t$

$$t = \log_{10} d$$

6. $7 = e^x$

$$x = \log_e 7$$

Write each equation in exponential form:

7. $8 = \log_2 x$

$$x = 2^8$$

8. $w = \log_4 11$

$$11 = 4^w$$

9. $a = \log_3 21$

$$21 = 3^a$$

10. $\log_6 t = 5$

$$t = 6^5$$

11. $\log_{10} 8 = k$

$$8 = 10^k$$

12. $4 = \log_3 81$

$$81 = 3^4$$

Solve for x:

13. $16 = 4^x$

$$4^2 = 4^x$$

$$x = 2$$

14. $x = 1.5^4$

$$= 5.0625$$

(calculator)

15. $\log_5 x = 3$

$$x = 5^3 = 125$$

16. $\log_3 27 = x$

$$27 = 3^x$$

$$3^3 = 3^x$$

$$x = 3$$

17. $\log_4 4^3 = x$

$$4^x = 4^3$$

$$x = 3$$

18. $\log_3 \frac{1}{9} = x$

$$\frac{1}{9} = 3^x$$

$$3^{-2} = 3^x$$

$$x = -2$$

19. $\log_x 16 = \frac{1}{2}$

$$x^{\frac{1}{2}} = 16$$

$$\sqrt{x} = 16$$

$$x = 16^2 = 256$$

20. $\log_x 49 = 2$

$$x^2 = 49$$

$$x = 7$$