

Name Key

Date _____

<p>1. Rewrite as an exponential $\log_3 x = 5$</p> <p>$x = 3^5$</p>	<p>2. Rewrite as an exponential $\log_{\frac{1}{5}} 32 = y$</p> <p>$32 = \frac{1}{5}^y$</p>
<p>3. Rewrite as a logarithm. $x^2 = 64$</p> <p>$2 = \log_x 64$</p>	<p>4. Rewrite as a logarithm. $2^3 = 8$</p> <p>$3 = \log_2 8$</p>
<p>5. Find the inverse: $y = 4^x - 2$</p> <p>$x = 4^y - 2$ $+2 \quad +2$ $(x+2) = (4)^y$</p> <p>$\log_4 (x+2) = y^{-1}$</p>	<p>6. Find the inverse: $y = \log_3 4x$</p> <p>$x = \log_3 4y$ $\frac{3^x}{4} = \frac{4y}{4}$ $y^{-1} = \frac{3^x}{4}$</p>
<p>7. Evaluate: $\log_{10} 100 = x$</p> <p>$10^x = 100$</p> <p>$x = 2$</p>	<p>8. Evaluate: $\log_4 64 = x$</p> <p>$4^x = 64$</p> <p>$x = 3$</p>
<p>9. Evaluate: $\log_3 9 = x$</p> <p>$3^x = 9$</p> <p>$x = 2$</p>	<p>10. Evaluate: $\log_4 2 = x$</p> <p>$4^x = 2$</p> <p>$x = \frac{1}{2}$</p>



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11. Rewrite as an exponential:
 $\log_7 49 = 2$

$$7^2 = 49$$

12. Rewrite as an exponential:
 $\log_5 125 = 3$

$$5^3 = 125$$

13. Rewrite as an exponential:
 $\log_4 \frac{1}{4} = -1$

$$\frac{1}{4} = 4^{-1}$$

14. Evaluate the logarithm:
 $\log_9 81 = x$

$$9^x = 81$$

$$x = 2$$

15. Evaluate the logarithm:
 $\log_3 \frac{1}{3} = x$

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

$$x = -1$$

16. Evaluate the logarithm:
 $\log_{27} 3 = x$

$$27^x = 3$$

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

17. Find the inverse:
 $y = \log_3(x+2) - 5$

$$x = \log_3(y+2) - 5$$

$$(x+5) = \log_3(y+2)$$

$$3^{(x+5)} = y+2$$

$$y^{-1} = 3^{(x+5)} - 2$$

18. Find the inverse:
 $y = \log_{10} \frac{x}{2}$

$$x = \log_{10} \frac{y}{2}$$

$$2 \cdot 10^x = \frac{y}{2} \cdot 2$$

$$2(10^x) = y^{-1}$$

19. Find the inverse:
 $y = \log_3 9x$

$$x = \log_3 9y$$

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

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

20. Find the inverse:
 $y = \log_6(x+2)$

$$x = \log_6(y+2)$$

$$6^y = y+2$$

$$6^x - 2 = y^{-1}$$

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