Name_____

Inverses of Logarithms

Date_____ Period____

Find the inverse of each function.

1) $y = \log\left(-2x\right)$

2) $y = \log_{\frac{1}{4}} x^5$

3) $y = \log_{\frac{1}{5}} x - 4$

4) $y = \log_3\left(4^x - 4\right)$

5) $y = \log_2\left(3x^3\right)$

6) $y = -7\log_6\left(-3x\right)$

7) $y = \log_2\left(x + 5\right) - 9$

8) $y = \log_6\left(4x + 4\right)$

9) $y = \log_5\left(3x^3 - 6\right)$

10) $y = 6\log_2\left(2^x - 7\right)$

11) $y = 6\log_5\left(-4x\right) - 7$

12) $y = 6^{\frac{x}{4}}$

13) $y = \dfrac{5^{1+x} + 1}{5^x}$

14) $y = 5^x - 8$

15) $y = 5^{\frac{x}{2}}$

16) $y = -\dfrac{1}{4^{1+x}}$

17) $y = \left(\dfrac{4^x}{-2}\right)^{\frac{1}{3}}$

18) $y = \left(4^x - 1\right)^{\frac{1}{5}}$

19) $y = \left(5^x - 7\right)^{\frac{1}{4}}$

20) $y = \left(\left(\dfrac{1}{5}\right)^x - 2\right)^{\frac{1}{2}}$

21) $y = \left(\dfrac{3^x - 8}{-3}\right)^{\frac{1}{4}}$

22) $y = \log_5 \dfrac{3^x + 9}{2}$

23) $y = \left(\dfrac{3^x - 4}{-2}\right)^{\frac{1}{2}}$

24) $y = \left(\dfrac{3^x - 9}{3}\right)^{\frac{1}{5}}$

Name_____

Inverses of Logarithms

Date_____ Period____

Find the inverse of each function.

1) $y = \log(-2x)$

$y = -\dfrac{10^x}{2}$

2) $y = \log_{\frac{1}{4}} x^5$

$y = \dfrac{1}{\sqrt[5]{4^x}}$

3) $y = \log_{\frac{1}{5}} x - 4$

$y = \dfrac{1}{5^{x+4}}$

4) $y = \log_3\left(4^x - 4\right)$

$y = \log_4\left(3^x + 4\right)$

5) $y = \log_2\left(3x^3\right)$

$y = \left(\dfrac{2^x}{3}\right)^{\frac{1}{3}}$

6) $y = -7\log_6(-3x)$

$y = \dfrac{6^{-\frac{x}{7}}}{-3}$

7) $y = \log_2(x+5) - 9$

$y = 2^{x+9} - 5$

8) $y = \log_6(4x+4)$

$y = \dfrac{6^x - 4}{4}$

9) $y = \log_5\left(3x^3 - 6\right)$

$y = \left(\dfrac{5^x + 6}{3}\right)^{\frac{1}{3}}$

10) $y = 6\log_2\left(2^x - 7\right)$

$y = \log_2\left(2^{\frac{x}{6}} + 7\right)$

11) $y = 6\log_5(-4x) - 7$

$y = \dfrac{5^{\frac{x+7}{6}}}{-4}$

12) $y = 6^{\frac{x}{4}}$

$y = \log_6 x^4$

13) $y = \dfrac{5^{1+x} + 1}{5^x}$

$y = \log_{\frac{1}{5}} (x - 5)$

14) $y = 5^x - 8$

$y = \log_5 (x + 8)$

15) $y = 5^{\frac{x}{2}}$

$y = \log_5 x^2$

16) $y = -\dfrac{1}{4^{1+x}}$

$y = \log_{\frac{1}{4}} -4x$

17) $y = \left(\dfrac{4^x}{-2}\right)^{\frac{1}{3}}$

$y = \log_4 -2x^3$

18) $y = \left(4^x - 1\right)^{\frac{1}{5}}$

$y = \log_4 (x^5 + 1)$

19) $y = \left(5^x - 7\right)^{\frac{1}{4}}$

$y = \log_5 (x^4 + 7)$

20) $y = \left(\left(\dfrac{1}{5}\right)^x - 2\right)^{\frac{1}{2}}$

$y = \log_{\frac{1}{5}} (x^2 + 2)$

21) $y = \left(\dfrac{3^x - 8}{-3}\right)^{\frac{1}{4}}$

$y = \log_3 (-3x^4 + 8)$

22) $y = \log_5 \dfrac{3^x + 9}{2}$

$y = \log_3 (2 \cdot 5^x - 9)$

23) $y = \left(\dfrac{3^x - 4}{-2}\right)^{\frac{1}{2}}$

$y = \log_3 (-2x^2 + 4)$

24) $y = \left(\dfrac{3^x - 9}{3}\right)^{\frac{1}{5}}$

$y = \log_3 (3x^5 + 9)$