Math 3 Name_____

Unit 7.2 Evaluate logs, and inverse logs PRACTICE

Period____

Evaluate each expression.

1) $\log_2 \frac{1}{2}$

–1

2) $\log_2 8$

3

3) $\log_6 36$

2

4) $\log_6 216$

3

5) $\log_6 \frac{1}{36}$

–2

6) $\log_3 27$

3

7) $\log_2 \frac{1}{64}$

–6

8) $\log_5 125$

3

Use a calculator to approximate each to the nearest thousandth.

9) ln 1.1

0.095

10) ln 23

3.135

11) ln 40

3.689

12) ln 21

3.045

13) $\log_3 46$

3.485

14) $\log_6 48$

2.161

15) $\log_6 5$

0.898

16) $\log_2 2.1$

1.07

Find the inverse of each function.

17) $y = 5 \ln x$

$y = e^{\frac{x}{5}}$

18) $y = \log_4 x^2$

$y = 4^{\frac{x}{2}}$

19) $y = 3 \log_x 5$

$y = 5^{\frac{3}{x}}$

20) $y = \log_3 (3x)$

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

21) $y = \log_4 x^3$

$y = 4^{\frac{x}{3}}$

22) $y = \log_{\frac{1}{4}} (x - 6)$

$y = \left(\frac{1}{4}\right)^x + 6$

23) $y = \log_3 (4x)$

$y = \frac{3^x}{4}$

24) $y = \log_2 x^4$

$y = 2^{\frac{x}{4}}$

25) $y = \log_6 (x - 1)$

$y = 6^x + 1$

26) $y = -8 \log_{\frac{1}{5}} x$

$y = \left(\frac{1}{5}\right)^{-\frac{x}{8}}$

27) $y = -7 \log_x 3$

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

28) $y = \log_x 5 + 5$

$y = 5^{\frac{1}{x-5}}$

29) $y = \log_3 x^5$

$y = 3^{\frac{x}{5}}$

30) $y = \log_x 5 - 7$

$y = 5^{\frac{1}{x+7}}$

31) $y = \ln (x + 4)$

$y = e^x - 4$

32) $y = \log_6 x - 9$

$y = 6^{x+9}$

33) $y = \log_{\frac{1}{4}} x - 7$

$y = \frac{1}{4^{x+7}}$ or $y = \left(\frac{1}{4}\right)^{x+7}$

34) $y = 4 \log_4 x$

$y = 4^{\frac{x}{4}}$