Algebra 2 - Task 7.1 Name_____

Convert Between Logs & Exponential Functions

Date_____ Period____

Rewrite each equation in exponential form.

1) $\log_{16} 256 = 2$

2) $\log_{9} 81 = 2$

3) $\log_{2} \frac{1}{8} = -3$

4) $\log_{5} 25 = 2$

5) $\log_{20} 400 = 2$

6) $\log_{17} 289 = 2$

7) $\log_{13} 169 = 2$

8) $\log_{5} 125 = 3$

9) $\log_{9} \frac{1}{81} = -2$

10) $\log_{169} 13 = \frac{1}{2}$

11) $\log_{y} x = \frac{2}{3}$

12) $\log_{y} 76 = x$

13) $\log_{n} 117 = 11$

14) $\log_{5} a = b$

15) $\log_{y} 41 = x$

16) $\log_{n} m = -2$

17) $\log x = y$

18) $\log_{x} 11 = y$

19) $\log_{x} 105 = y$

20) $\log_{5} 50 = k$

Rewrite each equation in logarithmic form.

21) $4^{\frac{1}{2}} = 2$

22) $3^5 = 243$

23) $14^{-2} = \frac{1}{196}$

24) $18^2 = 324$

25) $3^3 = 27$

26) $\left(\frac{1}{6}\right)^3 = \frac{1}{216}$

27) $14^2 = 196$

28) $36^{-\frac{1}{2}} = \frac{1}{6}$

29) $6^3 = 216$

30) $17^2 = 289$

31) $x^y = 101$

32) $v^u = 74$

33) $3^n = 125$

34) $x^y = 130$

35) $x^y = 191$

36) $m^n = 35$

37) $x^y = 98$

38) $n^m = 156$

39) $y^x = 72$

40) $x^{-13} = y$

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Rewrite each equation in exponential form.

1) $\log_{16} 256 = 2$

$16^2 = 256$

2) $\log_9 81 = 2$

$9^2 = 81$

3) $\log_2 \frac{1}{8} = -3$

$2^{-3} = \frac{1}{8}$

4) $\log_5 25 = 2$

$5^2 = 25$

5) $\log_{20} 400 = 2$

$20^2 = 400$

6) $\log_{17} 289 = 2$

$17^2 = 289$

7) $\log_{13} 169 = 2$

$13^2 = 169$

8) $\log_5 125 = 3$

$5^3 = 125$

9) $\log_9 \frac{1}{81} = -2$

$9^{-2} = \frac{1}{81}$

10) $\log_{169} 13 = \frac{1}{2}$

$169^{\frac{1}{2}} = 13$

11) $\log_y x = \frac{2}{3}$

$y^{\frac{2}{3}} = x$

12) $\log_y 76 = x$

$y^x = 76$

13) $\log_n 117 = 11$

$n^{11} = 117$

14) $\log_5 a = b$

$5^b = a$

15) $\log_y 41 = x$

$y^x = 41$

16) $\log_n m = -2$

$n^{-2} = m$

17) $\log x = y$

$10^y = x$

18) $\log_x 11 = y$

$x^y = 11$

19) $\log_x 105 = y$

$x^y = 105$

20) $\log_5 50 = k$

$5^k = 50$

Rewrite each equation in logarithmic form.

21) $4^{\frac{1}{2}} = 2$

$\log_4 2 = \frac{1}{2}$

22) $3^5 = 243$

$\log_3 243 = 5$

23) $14^{-2} = \frac{1}{196}$

$\log_{14} \frac{1}{196} = -2$

24) $18^2 = 324$

$\log_{18} 324 = 2$

25) $3^3 = 27$

$\log_3 27 = 3$

26) $\left(\frac{1}{6}\right)^3 = \frac{1}{216}$

$\log_{\frac{1}{6}} \frac{1}{216} = 3$

27) $14^2 = 196$

$\log_{14} 196 = 2$

28) $36^{-\frac{1}{2}} = \frac{1}{6}$

$\log_{36} \frac{1}{6} = -\frac{1}{2}$

29) $6^3 = 216$

$\log_6 216 = 3$

30) $17^2 = 289$

$\log_{17} 289 = 2$

31) $x^y = 101$

$\log_x 101 = y$

32) $v^u = 74$

$\log_v 74 = u$

33) $3^n = 125$

$\log_3 125 = n$

34) $x^y = 130$

$\log_x 130 = y$

35) $x^y = 191$

$\log_x 191 = y$

36) $m^n = 35$

$\log_m 35 = n$

37) $x^y = 98$

$\log_x 98 = y$

38) $n^m = 156$

$\log_n 156 = m$

39) $y^x = 72$

$\log_y 72 = x$

40) $x^{-13} = y$

$\log_x y = -13$

Algebra 2 - Task 7.1 Name_____

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Date_____ Period____

Rewrite each equation in exponential form.

1) $\log_{11} 121 = 2$

2) $\log_{4} 64 = 3$

3) $\log_{11} 11 = 1$

4) $\log_{15} 225 = 2$

5) $\log_{15} 15 = 1$

6) $\log_{243} 3 = \frac{1}{5}$

7) $\log_{361} \frac{1}{19} = -\frac{1}{2}$

8) $\log_{64} 8 = \frac{1}{2}$

9) $\log_{19} \frac{1}{361} = -2$

10) $\log_{7} 49 = 2$

11) $\log_{m} n = 11$

12) $\log_{15} v = 12$

13) $\log_{18} 190 = b$

14) $\log y = x$

15) $\log_{5} x = y$

16) $\log_{20} m = n$

17) $\log_{x} 45 = -14$

18) $\log_{y} x = \frac{1}{2}$

19) $\log_{n} m = -13$

20) $\log_{18} b = a$

Rewrite each equation in logarithmic form.

21) $5^2 = 25$

22) $4^{-2} = \frac{1}{16}$

23) $12^1 = 12$

24) $12^{-2} = \frac{1}{144}$

25) $12^2 = 144$

26) $16^1 = 16$

27) $20^2 = 400$

28) $\left(\frac{1}{8}\right)^2 = \frac{1}{64}$

29) $256^{\frac{1}{2}} = 16$

30) $8^2 = 64$

31) $8^a = b$

32) $y^x = 128$

33) $a^b = c$

34) $17^y = x$

35) $12^b = a$

36) $m^8 = n$

37) $16^x = 97$

38) $8^{-6} = x$

39) $x^y = 122$

40) $6^k = 2$

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Rewrite each equation in exponential form.

1) $\log_{11} 121 = 2$

$11^2 = 121$

2) $\log_4 64 = 3$

$4^3 = 64$

3) $\log_{11} 11 = 1$

$11^1 = 11$

4) $\log_{15} 225 = 2$

$15^2 = 225$

5) $\log_{15} 15 = 1$

$15^1 = 15$

6) $\log_{243} 3 = \frac{1}{5}$

$243^{\frac{1}{5}} = 3$

7) $\log_{361} \frac{1}{19} = -\frac{1}{2}$

$361^{-\frac{1}{2}} = \frac{1}{19}$

8) $\log_{64} 8 = \frac{1}{2}$

$64^{\frac{1}{2}} = 8$

9) $\log_{19} \frac{1}{361} = -2$

$19^{-2} = \frac{1}{361}$

10) $\log_7 49 = 2$

$7^2 = 49$

11) $\log_m n = 11$

$m^{11} = n$

12) $\log_{15} v = 12$

$15^{12} = v$

13) $\log_{18} 190 = b$

$18^b = 190$

14) $\log y = x$

$10^x = y$

15) $\log_5 x = y$

$5^y = x$

16) $\log_{20} m = n$

$20^n = m$

17) $\log_x 45 = -14$

$x^{-14} = 45$

18) $\log_y x = \frac{1}{2}$

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

19) $\log_n m = -13$

$n^{-13} = m$

20) $\log_{18} b = a$

$18^a = b$

Rewrite each equation in logarithmic form.

21) $5^2 = 25$

$\log_5 25 = 2$

22) $4^{-2} = \frac{1}{16}$

$\log_4 \frac{1}{16} = -2$

23) $12^1 = 12$

$\log_{12} 12 = 1$

24) $12^{-2} = \frac{1}{144}$

$\log_{12} \frac{1}{144} = -2$

25) $12^2 = 144$

$\log_{12} 144 = 2$

26) $16^1 = 16$

$\log_{16} 16 = 1$

27) $20^2 = 400$

$\log_{20} 400 = 2$

28) $\left(\frac{1}{8}\right)^2 = \frac{1}{64}$

$\log_{\frac{1}{8}} \frac{1}{64} = 2$

29) $256^{\frac{1}{2}} = 16$

$\log_{256} 16 = \frac{1}{2}$

30) $8^2 = 64$

$\log_8 64 = 2$

31) $8^a = b$

$\log_8 b = a$

32) $y^x = 128$

$\log_y 128 = x$

33) $a^b = c$

$\log_a c = b$

34) $17^y = x$

$\log_{17} x = y$

35) $12^b = a$

$\log_{12} a = b$

36) $m^8 = n$

$\log_m n = 8$

37) $16^x = 97$

$\log_{16} 97 = x$

38) $8^{-6} = x$

$\log_8 x = -6$

39) $x^y = 122$

$\log_x 122 = y$

40) $6^k = 2$

$\log_6 2 = k$