11U6 Name_____

Logarithms Practice

Solve each equation. Round your answers to the nearest 4 decimal places (nearest ten-thousandth). Check your work (answers are on the back).

1) $19^x = 70$

2) $9^k = 17$

$\log(9^k) = \log(17)$

$\Rightarrow k \cdot \log(9) = \log(17)$

$\therefore k = \frac{\log(17)}{\log(9)} = 1.2895$

3) $13^r = 23$

4) $5^n - 5 = 84$ (+5, +5)

$5^n = 89$

$\Rightarrow n \cdot \log(5) = \log(89)$

$\therefore n = \frac{\log(89)}{\log(5)} = 2.7889$

5) $6^x + 9 = 79$

6) $-8.1 \cdot 4^n = -73$

7) $14^n + 7.9 = 88$

8) $13^{3k} + 3 = 95$

9) $7 \cdot 6^{-4b} = 52$

$6^{-4b} = \frac{52}{7}$

$-4b \cdot \log(6) = \log\left(\frac{52}{7}\right)$

$-4b = \frac{\log\left(\frac{52}{7}\right)}{\log(6)}$

$b = -\frac{1}{4}\left(\frac{\log\left(\frac{52}{7}\right)}{\log(6)}\right) = -0.2798$

10) $-5^{p-3} = -19$

Answers to Logarithms Practice

1) 1.4429
2) 1.2895
3) 1.2224
4) 2.7889
5) 2.3711
6) 1.586
7) 1.6609
8) 0.5876
9) −0.2798
10) 4.8295