Functions 11U 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) $19^x = 70$

Take the log of both sides

$\Rightarrow \log(19^x) = \log(70)$

$\Rightarrow x \cdot \log(19) = \log(70)$

$x = \frac{\log(70)}{\log(19)} = 1.44$

2) $9^k = 17$

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

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

$\Rightarrow k = \frac{\log(17)}{\log(9)} \approx 1.29$

$\boxed{a^m}$ ↓ get the power down

3) $13^r = 23$

4) $5^n - 5 = 84$

$5^n = 89$

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

$\therefore n = \frac{\log(89)}{\log(5)} \approx 2.79$

5) $6^x + 9 = 79$

6) $4^n = -73$

$4^n = \frac{-73}{-8.1} = 9.0123$

$n \cdot \log(4) = \log(9.0123)$

$\Rightarrow n = \frac{\log(9.0123)}{\log(4)} \approx 1.59$

7) $14^n + 7.9 = 88$

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

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

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