

$\log_{10} 10$

Algebra 2

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Name _____

Log Equations 1

Date _____ Period _____

Solve each equation. Round your answers to the nearest ten-thousandth.

1) $8^{k-2} = 63$ $\rightarrow \frac{\log 63}{\log 8}$

$\log_8 63 = k - 2$
 $1.9924 = k - 2$ \rightarrow $k = 3.9924$

2) $4^{r-4} = 86$

4) $7^{n-6} = 41$

5) $8^{n+6} = 65$

6) $3^{-10x} = 87$

7) $10^{7b} = 91$

8) $13^{-8.5a} = 67$

9) $16^{8x} = 14$

10) $9^{5x} = 59$

11) $18^{p-2} + 5 = 29.1$
 $\frac{\log 24.1}{\log 18} = p - 2$
 $1.10096 = p - 2$
 $3.10096 = p$

12) $\frac{-3.6 \cdot 10^{9v}}{-3.6} = \frac{-29}{-3.6}$
 $10^{9v} = 8.0555$
 $\log_{10} 8.0555 = 9v$
 $\frac{.90609}{9} = \frac{9v}{9}$
 $.10067 = v$

13) $\frac{-3 \cdot 17^{v+7}}{-3} = \frac{-59}{-3}$

14) $7^{8n} - 4 = 80$
 $+4 +4$

15) $\frac{8 \cdot 8^{-7k}}{8} = \frac{68.9}{8}$