

6.4.D4 – Solving Exponential & Logarithmic Equations

Begin by completing the problem in cell #1. Search for your answer in the remaining cells. Put #2 in the problem blank: #_____. Work that question and proceed in this manner until you complete the circuit.

Solve each equation, finding exact answers when possible. When using logarithms to solve exponential equations, round the solution to four decimal places.

<p>Answer: 3</p> <p># 1 $4^{3-x} = 32^x$</p>	<p>Answer: -2</p> <p>#_____ $3 \log_8 x = 2$</p>
<p>Answer: 1.0548</p> <p>#_____ $6(15)^{x-8} = 47$</p>	<p>Answer: 7</p> <p>#_____ $\log_8(x + 5) - \log_8 x = 2$</p>
<p>Answer: -9</p> <p>#_____ $-7 \log_9(x + 2) = -7$</p>	<p>Answer: 8.7601</p> <p>#_____ $2^{5-4x} + 9 = 21$</p>
<p>Answer: 4</p> <p>#_____ $14^x - 6 = 3$</p>	<p>Answer: $-\frac{13}{4}$</p> <p>#_____ $\log(-5x + 2) = \log(2x - 8)$</p>

<p>Answer: $\frac{6}{7}$</p> <p># _____ $5^{x-9} = 625^x$</p>	<p>Answer: $\frac{85}{8}$</p> <p># _____ $\log_8 2 - \log_8(x + 1) = \log_8 5$</p>
<p>Answer: $-\frac{3}{5}$</p> <p># _____ $\log_4 x + \log_4(x + 2) = \log_4 15$</p>	<p>Answer: $\frac{4}{5}$</p> <p># _____ $5^{5x+3} = 25^{x+1}$</p>
<p>Answer: no solution</p> <p># _____ $\log_3(-9x) - 10 = -6$</p>	<p>Answer: 0.8326</p> <p># _____ $5(15)^x = 87$</p>
<p>Answer: $-\frac{1}{3}$</p> <p># _____ $\log_6 \frac{1}{36} = y$</p>	<p>Answer: $\frac{5}{63}$</p> <p># _____ $\log_5(x + 5) + \log_5 8 = 3$</p>
<p>Answer: 0.3538</p> <p># _____ $\log_{17}(-5x - 6) = \log_{17}(7 - x)$</p>	<p>Answer: -3</p> <p># _____ $\left(\frac{1}{81}\right)^{1-2x} = 27^x$</p>

