

We Have A Match!

	Partner A: Solve the Equation	We Match!	Partner B: Solve the Equation
1.	$\left(\frac{1}{5}\right)^{x-3} = 125$		$(36)(6)^{-3x+1} = 6^{x+3}$
2.	$\log_2(x-1) - 2 = 0$		$\log_{11}(x-4) + 8 = 8$
3.	$36^x = 216$		$\frac{(2)^{3x}}{64} = 2^{-x}$
4.	$(16)^{-3x} \cdot (16)^{-3x} = 64$		$25^{2x+2} = 5^3$
5.	$6 + \log_2(x+7) = 9$		$\frac{6^{2x+1}}{6^{3x}} = 1$
6.	$\log_7 x - \log_7(x+1) = 2$		$\log_2(x-2) - \log_2 x = 2$
7.	$\log_6(-3x) + 9 = 13$		$4 \log_{12}(-4x) = 12$
8.	$(5)^{2x} \cdot (5)^{2-x} = \frac{1}{125}$		$\log_8(x+6) + 1 = 1$

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	Partner A: Solve the Equation	We Match!	Partner B: Solve the Equation
1.	$\left(\frac{1}{5}\right)^{x-3} = 125$ $(5^{-1})^{x-3} = (5^3)$ $-x+3 = 3 \rightarrow \boxed{x=0}$	$\boxed{x=0}$	$(36)(6)^{-3x+1} = 6^{x+3}$ $(6^2)(6)^{-3x+1} = 6^{x+3}$ $6^{-3x+3} = 6^{x+3}$ $-3x+3 = x+3 \rightarrow \boxed{x=0}$
2.	$\log_2(x-1) - 2 = 0$ $\log_2(x-1) = 2$ $2^2 = x-1$ $4 = x-1 \rightarrow \boxed{x=5}$	$\boxed{5}$	$\log_{11}(x-4) + 8 = 8$ $\log_{11}(x-4) = 0$ $11^0 = x-4$ $1 = x-4 \rightarrow \boxed{x=5}$
3.	$36^x = 216$ $6^{2x} = 6^3$ $2x = 3$ $x = \frac{3}{2}$	$\boxed{\frac{3}{2}}$	$\frac{2^{3x}}{2^6} \cdot \frac{(2)^{3x}}{64} = 2^{-x}$ $2^{3x-6} = 2^{-x}$ $3x-6 = -x \rightarrow 4x=6 \rightarrow \boxed{x=\frac{3}{2}}$
4.	$(16)^{-3x} \cdot (16)^{-3x} = 64$ $16^{-6x} = 64$ $(4^2)^{-6x} = 4^3 \rightarrow \boxed{x=-\frac{1}{4}}$ $-12x = 3 \rightarrow \boxed{x=-\frac{1}{4}}$	$\boxed{-\frac{1}{4}}$	$25^{2x+2} = 5^3$ $(5^2)^{2x+2} = 5^3$ $4x+4 = 3$ $4x = -1$
5.	$6 + \log_2(x+7) = 9$ $\log_2(x+7) = 3$ $2^3 = x+7$ $8 = x+7 \rightarrow \boxed{x=1}$	$\boxed{1}$	$\frac{6^{2x+1}}{6^{3x}} = 1$ $6^{-x+1} = 1$ $\log_6 1 = -x+1 \rightarrow 0 = -x+1 \rightarrow \boxed{x=1}$
6.	$\log_7 x - \log_7(x+1) = 2$ $\log_7\left(\frac{x}{x+1}\right) = 2$ $7^2 = \frac{x}{x+1}$ $49x + 49 = x \rightarrow 48x = -49 \rightarrow \boxed{x = -\frac{49}{48}}$	$\boxed{\text{no solution}}$	$\log_2(x-2) - \log_2 x = 2$ $\log_2\left(\frac{x-2}{x}\right) = 2$ $2^2 = \frac{x-2}{x}$ $4x = x-2 \rightarrow 3x = -2 \rightarrow \boxed{x = -\frac{2}{3}}$
7.	$\log_6(-3x) + 9 = 13$ $\log_6(-3x) = 4$ $6^4 = -3x$ $1296 = -3x \rightarrow \boxed{-432}$	$\boxed{-432}$	$4 \log_{12}(-4x) = 12$ $\log_{12}(-4x) = 3$ $12^3 = -4x$ $x = -432$
8.	$(5)^{2x} \cdot (5)^{2-x} = \frac{1}{125}$ $5^{2+x} = (5^{-3})$ $2+x = -3 \rightarrow \boxed{x=-5}$	$\boxed{-5}$	$\log_8(x+6) + 1 = 1$ $\log_8(x+6) = 0$ $8^0 = x+6$ $1 = x+6 \rightarrow \boxed{x=-5}$