

KEY

ALGEBRA 2

WORKSHEET SOLVING EXPONENTIAL EQUATIONS

Solve each equation for x.

1) $2^x = 2^{3x-4}$ (2)

2) $3^{2x-1} = 3$ (1)

3) $25^{x+3} = 25^{5x-7}$ (5/2)

4) $4^{3x-5} = 4^{8-x}$ (13/4)

5) $5^{x+1} = 25$ (1)

6) $3^{x-5} = 27$ (8)

7) $2^{3x-4} = 8^{x-1}$ (No Soln)

8) $3^{2x-4} = 1$ (2)

9) $4^{x+2} = 8$
(-1/2)

10) $9^x = 27$
(3/2)

11) $\left(\frac{1}{3}\right)^{x+2} = 9^{3x}$
(-2/7)

12) $\left(\frac{1}{4}\right)^{x-1} = 32^{x+3}$
(-13/7)

13) $18^{4x} = 18^x$
(0)

14) $125^{3-2x} = 5^{x-1}$
(10/7)

15) $4^{x-1} = \frac{1}{64}$ (-2)

16) $\left(\frac{1}{4}\right)^x = 8^{x-1}$ (3/5)

17) $3^x = 3\sqrt{3}$
(3/2)

18) $5^x = 25\sqrt{5}$
(5/2)

19) $4^{2x} = 16\sqrt[3]{4}$
(7/6)

20) $3^{x-4} = 9\sqrt{3}$ (13/2)