

Solve each equation.

13. $\frac{1}{27} = 3^{x-5}$

14. $\left(\frac{1}{3}\right)^x = 3^{x-6}$

15. $25^{2m} = 125^{m-3}$

16. $4^{x-1} = 8^x$

17. $2^{x+1} = 2^{2x+3}$

18. $3^{2x-1} = \frac{1}{9}$

19. $6^y = 6^{3y-1}$

20. $\left(\frac{1}{7}\right)^{6x} = 7^{2x-20}$

21. $3^{6x-5} = 9^{4x-3}$

22. $5^{2x+3} = \left(\frac{1}{25}\right)^{x+4}$

23. $2^{3x-1} = \left(\frac{1}{8}\right)^x$

24. $\left(\frac{1}{16}\right)^{x+1} = \left(\frac{1}{8}\right)^{2x-1}$