

Name _____

Date _____

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| 1. $3^{2x-5} = 3^{x+3}$ | 2. $5 \cdot 3^x = 405$ |
| 3. $4^x - 8 = 56$ | 4. $5^{x-4} + 8 = 133$ |
| 5. $4(2)^{2x} + 2 = 34$ | 6. $2^{3x} = \frac{1}{8}$ |
| 7. $3^{2x} = \left(\frac{1}{9}\right)^3$ | 8. $\left(\frac{1}{125}\right)^{4x} = 5^3$ |
| 9. $4^{4x+3} = 16^{x-3}$ | 10. $3^{2x+3} = \left(\frac{1}{81}\right)^{x-1}$ |



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| 11. $\log_3(x) = 4$ | 12. $\log_5(x - 3) = 2$ |
| 13. $\log_4(2x) = 3$ | 14. $2\log_2(x - 3) = 10$ |
| 15. $\log_3(x + 2) = \log_3 12$ | 16. $\log_7(3x) = \log_7(x + 20)$ |
| 17. $\log_3(x^2) = \log_3(2x + 3)$ | 18. $\log_2(x^2 + 2x) = \log_2 15$ |

