

Homework

p.519: 3-13 (odds), 16-22 (evens), 23, 54, 55

SOLVING EXPONENTIAL EQUATIONS Solve the equation.

3. $5^{x-4} = 25^{x-6}$

5. $8^{x-1} = 32^{3x-2}$

7. $4^{2x-5} = 64^{3x}$

9. $36^{5x+2} = \left(\frac{1}{6}\right)^{11-x}$

11. $25^{10x+8} = \left(\frac{1}{125}\right)^{4-2x}$

SOLVING EXPONENTIAL EQUATIONS Solve the equation.

13. $e^{-x} = 5$

16. $7^{6x} = 12$

18. $10^{3x} + 4 = 9$

20. $0.5^x - 0.25 = 4$

22. $2^{0.1x} - 5 = 7$

23. $\frac{3}{4}e^{2x} + \frac{7}{2} = 4$

54. **COOKING** You are cooking beef stew. When you take the beef stew off the stove, it has a temperature of 200°F . The room temperature is 75°F and the cooling rate of the beef stew is $r = 0.054$. How long (in minutes) will it take to cool the beef stew to a serving temperature of 100°F ?

55. **THERMOMETER** As you are hanging an outdoor thermometer, its reading drops from the indoor temperature of 75°F to 37°F in one minute. If the cooling rate is $r = 1.37$, what is the outdoor temperature?