

Name_____

Solve.

1) $\log_3 (x) = 2$

2) $\log_5 (x) = 3$

3) $\log_2 (x) = 1$

4) $\log_7 (x) = 1$

5) $\log (x) = 2$

6) $\log (x) = 3$

7) $\log_2 (x) = -3$

8) $\log_5 (x) = -3$

9) $\log_2 (x - 3) = 1$

10) $\log_2 (x - 3) = 3$

11) $\log_3 (x - 1) = -2$

12) $\log_2 (x - 3) = -3$

13) $\log_3 (x - 4) = -2$

14) $\log_5 (x + 3) = -3$

15) $\log_3 (21 - 3x) = 2$

16) $\log_3 (24 - 5x) = 2$

$$17) \log (4x + 7) = 1$$

$$26) \log_6 (x^2) = 4$$

$$18) \log (2x - 7) = 2$$

$$27) \log_x (49) = 2$$

$$19) 4\log_{625} (x) + 7 = 8$$

$$28) \log_x (256) = 4$$

$$20) 3\log_{27} (x) + 3 = 4$$

$$29) \log_x (36) = 2$$

$$21) \log_2 (\log_3 (y)) = 2$$

$$30) \log_x (81) = 2$$

$$22) \log_3 (\log_3 (y)) = 1$$

$$31) \log_x (81) = 4$$

$$23) \log_2 (\log_2 (y)) = 1$$

$$32) \log_x (25) = 2$$

$$24) \log_{11} (x^2) = 4$$

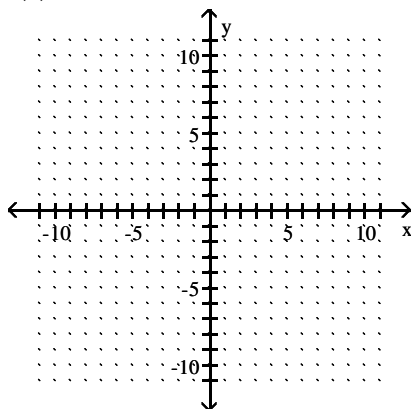
$$33) \log_x (25) = 2$$

$$25) \log_7 (x^2) = 4$$

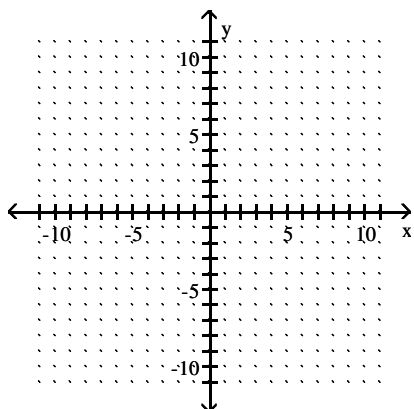
$$34) \log_x (27) = 3$$

Sketch the graph of the given function, its inverse, and $y = x$ on the same set of axes. Graph the function with a solid line, and graph $y = x$ and the function's inverse using dotted lines.

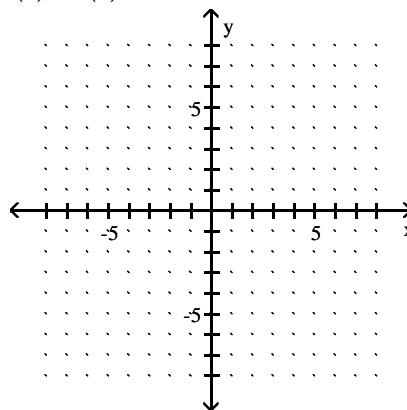
35) $f(x) = 3x$



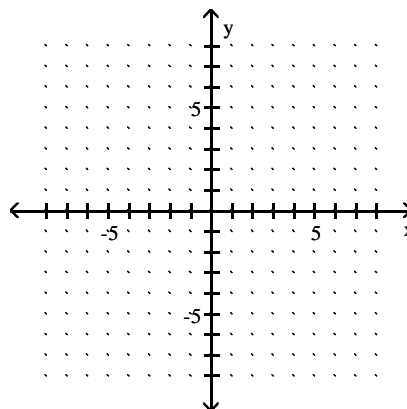
36) $f(x) = 4x$



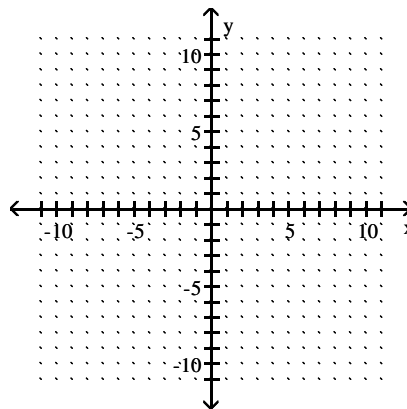
37) $f(x) = 2(9)^x$



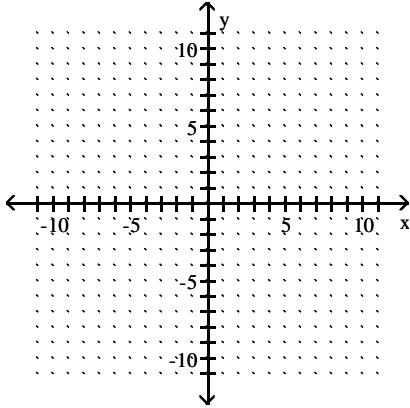
38) $f(x) = 5(3)^x$



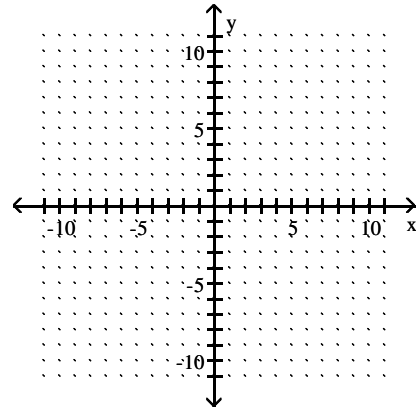
39) $f(x) = 2x - 3$



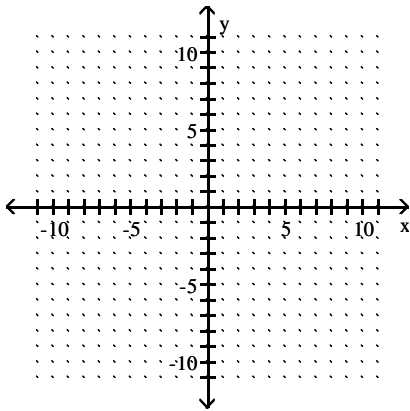
40) $f(x) = 2x - 4$



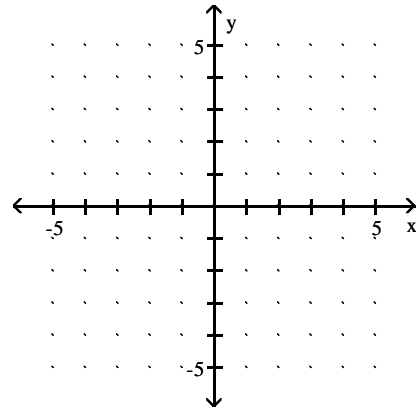
42) $f(x) = \frac{1}{2}x - 4$



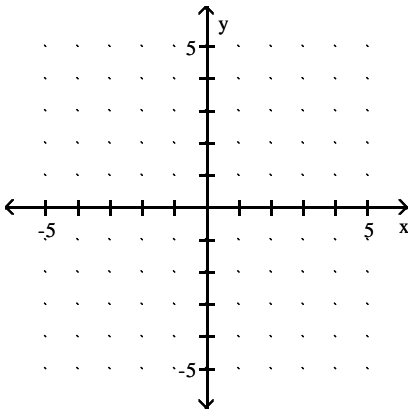
41) $f(x) = \frac{1}{2}x - 3$



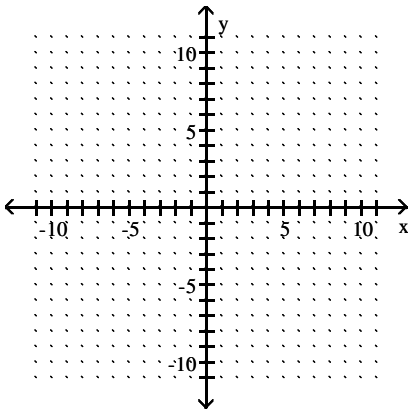
43) $f(x) = 4\left(\frac{1}{5}\right)^x$



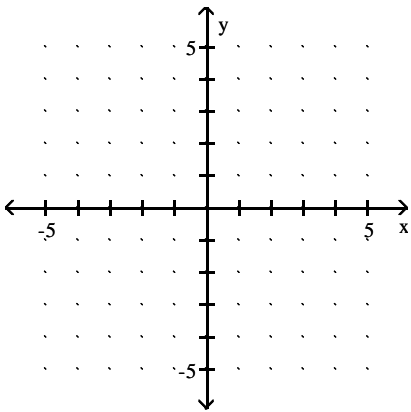
44) $f(x) = 5\left(\frac{1}{9}\right)^x$



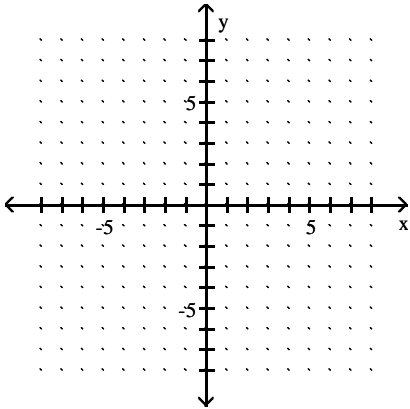
46) $f(x) = \frac{1}{2}x + 3$



45) $f(x) = 5\left(\frac{1}{6}\right)^x$



47) $f(x) = 2(3)^x$



Answer Key

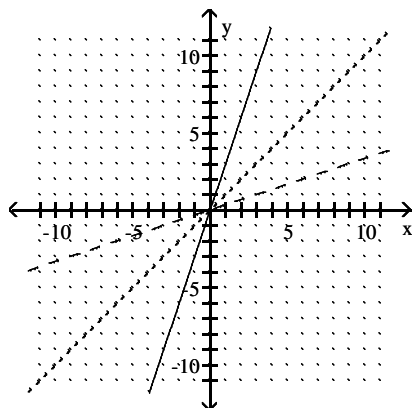
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- 1) 9
- 2) 125
- 3) 2
- 4) 7
- 5) 100
- 6) 1000
- 7) $\frac{1}{8}$
- 8) $\frac{1}{125}$
- 9) 5
- 10) 11
- 11) $\frac{10}{9}$
- 12) $\frac{25}{8}$
- 13) $\frac{37}{9}$
- 14) $-\frac{374}{125}$
- 15) 4
- 16) 3
- 17) $\frac{3}{4}$
- 18) $\frac{107}{2}$
- 19) 5
- 20) 3
- 21) 81
- 22) 27
- 23) 4
- 24) 121, -121
- 25) 49, -49
- 26) 36, -36
- 27) 7
- 28) 4
- 29) 6
- 30) 9
- 31) 3
- 32) 5
- 33) 5
- 34) 3

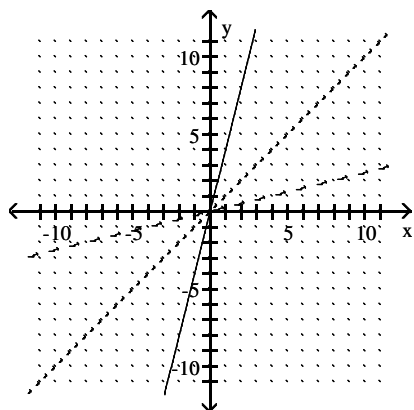
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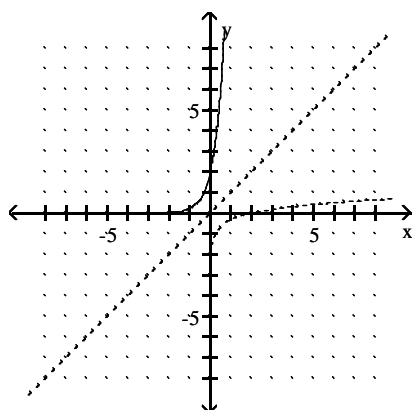
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36)



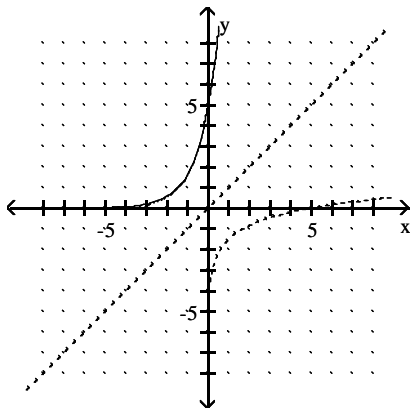
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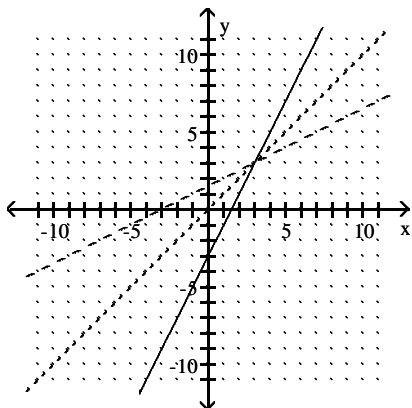
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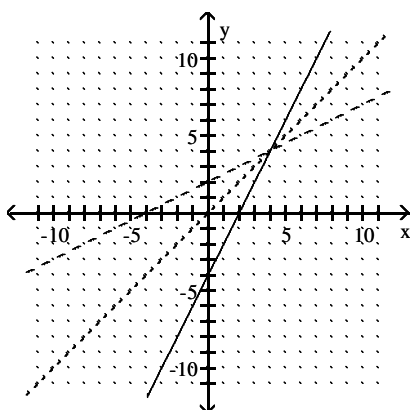
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39)



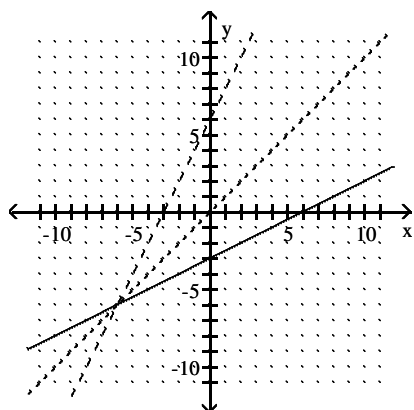
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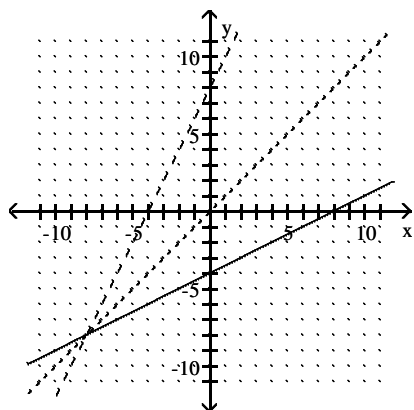
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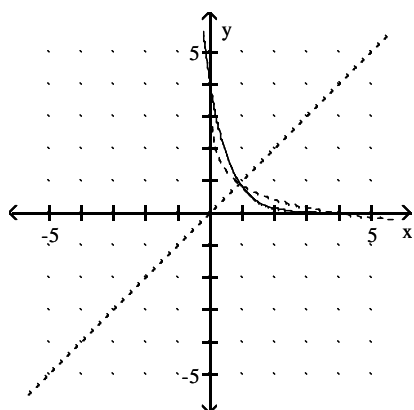
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42)



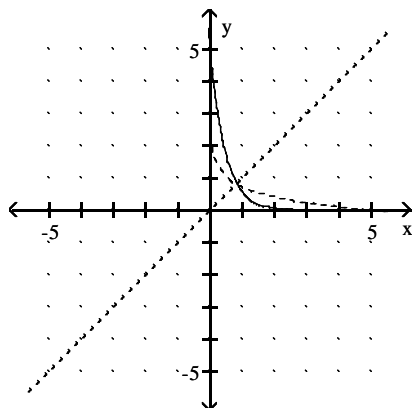
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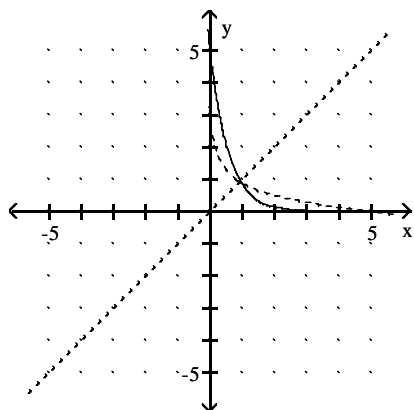
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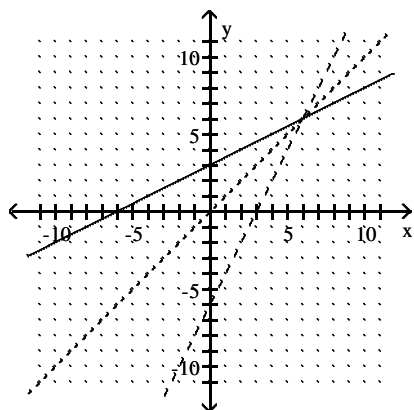
44)



45)



46)



Answer Key

Testname: WORKSHEET8.3B_SOLVINGLOGARITHMICFUNCTIONS_V02

47)

