

$$1. \log_{\frac{1}{35}} 5 = h \quad h = -\frac{1}{2}$$

$$\log_r \frac{1}{1000000} = -6 \quad r = 10$$

$$\log_{\frac{1}{36}} j = \frac{1}{2} \quad j = \frac{1}{6}$$

$$\log_u \frac{1}{16} = -\frac{1}{2} \quad u = 256$$

$$2. \log_{1024} n = 1 \quad n = 1024$$

$$\log_3 m = 1 \quad m = 3$$

$$\log_{\frac{1}{25}} \frac{1}{5} = x \quad x = \frac{1}{2}$$

$$\log_{\frac{1}{256}} 1 = g \quad g = 0$$

$$3. \log_{64} g = -\frac{1}{2} \quad g = \frac{1}{8}$$

$$\log_{512} t = 1 \quad t = 512$$

$$\log_4 \frac{1}{16} = h \quad h = -2$$

$$\log_{64} w = \frac{1}{2} \quad w = 8$$

$$4. \log_u \frac{1}{2} = -\frac{1}{4} \quad u = 16$$

$$\log_{\frac{1}{128}} 1 = b \quad b = 0$$

$$\log_2 \frac{1}{8} = n \quad n = -3$$

$$\log_u \frac{1}{100} = 2 \quad u = \frac{1}{10}$$

$$5. \log_w 512 = 1 \quad w = 512$$

$$\ln e^3 = j \quad j = 3$$

$$\log_{\frac{1}{36}} h = -\frac{1}{2} \quad h = 6$$

$$\log_5 \frac{1}{125} = s \quad s = -3$$

$$6. \log_{\frac{1}{9}} \frac{1}{81} = a \quad a = 2$$

$$\log_g \frac{1}{2} = \frac{1}{9} \quad g = \frac{1}{512}$$

$$\log_2 d = -5 \quad d = \frac{1}{32}$$

$$\log_{\frac{1}{100}} 100 = f \quad f = -1$$

$$7. \log_d 4 = -2 \quad d = \frac{1}{2}$$

$$\log_{1024} d = 0 \quad d = 1$$

$$\log_{\frac{1}{6}} 1 = q \quad q = 0$$

$$\log_5 \frac{1}{25} = r \quad r = -2$$

$$8. \log_{1024} t = 0 \quad t = 1$$

$$\log_{\frac{1}{256}} 256 = v \quad v = -1$$

$$\log_{\frac{1}{e^4}} z = z \quad z = 4$$

$$\log \frac{1}{10000} = g \quad g = -4$$

$$9. \log_{16} r = \frac{1}{4} \quad r = 2$$

$$\log_{16} \frac{1}{2} = h \quad h = -\frac{1}{4}$$

$$\log_{\frac{1}{64}} w = \frac{1}{2} \quad w = \frac{1}{8}$$

$$\log_f \frac{1}{6} = \frac{1}{2} \quad f = \frac{1}{36}$$

$$10. \log_{\frac{1}{2}} l = -4 \quad l = 16$$

$$\log_{\frac{1}{6}} 6 = m \quad m = -1$$

$$\log_2 l = -8 \quad l = \frac{1}{256}$$

$$\log_q 25 = 2 \quad q = 5$$

$$11. \log w = 0 \quad w = 1$$

$$\log_{64} f = \frac{1}{2} \quad f = 8$$

$$\log_9 s = 0 \quad s = 1$$

$$\log_5 5 = -\frac{1}{2} \quad a = \frac{1}{25}$$

$$12. \log_2 t = 4 \quad t = 16$$

$$\log_{\frac{1}{64}} p = -\frac{1}{2} \quad p = 8$$

$$\log_{256} z = 1 \quad z = 256$$

$$\log_{36} q = -1 \quad q = \frac{1}{36}$$

$$13. \log_t e^2 = 2 \quad t = e$$

$$\log_{\frac{1}{36}} v = -1 \quad v = 36$$

$$\log_{\frac{1}{64}} 1 = y \quad y = 0$$

$$\log_t \frac{1}{3} = -\frac{1}{2} \quad t = 9$$

$$14. \log_d \frac{1}{100} = -2 \quad d = 10$$

$$\log_{64} f = -\frac{1}{3} \quad f = \frac{1}{4}$$

$$\log_2 m = -1 \quad m = \frac{1}{2}$$

$$\log_{\frac{1}{10}} 1000000 = m \quad m = -6$$

$$15. \log_2 \frac{1}{64} = u \quad u = -6$$

$$\log_{\frac{1}{9}} \frac{1}{3} = c \quad c = \frac{1}{2}$$

$$\log_q \frac{1}{6} = 1 \quad q = \frac{1}{6}$$

$$\log_h \frac{1}{49} = -1 \quad h = 49$$

$$16. \log_{81} l = -1 \quad l = \frac{1}{81}$$

$$\log_{36} 1 = r \quad r = 0$$

$$\log_9 x = -1 \quad x = \frac{1}{9}$$

$$\log_2 h = 3 \quad h = 8$$

$$17. \log_h \frac{1}{100000} = -5 \quad h = 10$$

$$\log_m \frac{1}{5} = -1 \quad m = 5$$

$$\log_r 6 = 1 \quad r = 6$$

$$\log_v 100000 = -5 \quad v = \frac{1}{10}$$

$$18. \log_{\frac{1}{3}} 1 = a \quad a = 0$$

$$\log_{\frac{1}{100}} \frac{1}{10} = m \quad m = \frac{1}{2}$$

$$\log_{\frac{1}{6}} 1 = c \quad c = 0$$

$$\log_a 16 = -1 \quad a = \frac{1}{16}$$

$$19. \log_2 4 = t \quad t = 2$$

$$\log_{64} f = \frac{1}{6} \quad f = 2$$

$$\ln e^2 = a \quad a = 2$$

$$\log_{\frac{1}{2}} 8 = y \quad y = -3$$

$$20. \log_x 5 = \frac{1}{2} \quad x = 25$$

$$\log_{\frac{1}{49}} \frac{1}{7} = n \quad n = \frac{1}{2}$$

$$\log_z \frac{1}{4} = -2 \quad z = 2$$

$$\log_{\frac{1}{1024}} 1 = u \quad u = 0$$

$$21. \log_{\frac{1}{e}} e^4 = x \quad x = -4$$

$$\log_u 256 = -8 \quad u = \frac{1}{2}$$

$$\log_2 n = 5 \quad n = 32$$

$$\log_{\frac{1}{2}} \frac{1}{8} = h \quad h = 3$$

$$22. \log v = -2 \quad v = \frac{1}{100}$$

$$\log_{256} t = 1 \quad t = 256$$

$$\log_8 \frac{1}{8} = u \quad u = -1$$

$$\log_{\frac{1}{4}} \frac{1}{16} = q \quad q = 2$$

$$23. \log_{32} z = -1 \quad z = \frac{1}{32}$$

$$\log_{256} 256 = g \quad g = 1$$

$$\log_c \frac{1}{e^2} = 2 \quad c = \frac{1}{e}$$

$$\log_{\frac{1}{1024}} \frac{1}{2} = a \quad a = \frac{1}{10}$$

$$24. \log_{64} p = 1 \quad p = 64$$

$$\log_{\frac{1}{32}} h = 0 \quad h = 1$$

$$\ln \frac{1}{e^3} = a \quad a = -3$$

$$\log_l 3 = -\frac{1}{4} \quad l = \frac{1}{81}$$

$$25. \log_4 64 = q \quad q = 3$$

$$\log_4 \frac{1}{2} = u \quad u = -\frac{1}{2}$$

$$\log_{\frac{1}{7}} 7 = x \quad x = -1$$

$$\log_{\frac{1}{100}} \frac{1}{10} = f \quad f = \frac{1}{2}$$

$$26. \log_z \frac{1}{25} = 2 \quad z = \frac{1}{5}$$

$$\log_l 128 = 1 \quad l = 128$$

$$\log_{\frac{1}{5}} q = -3 \quad q = 125$$

$$\log_u \frac{1}{e^4} = -4 \quad u = e$$

$$27. \log_{\frac{1}{64}} \frac{1}{64} = j \quad j = 1$$

$$\log_m \frac{1}{e} = -1 \quad m = e$$

$$\log w = -3 \quad w = \frac{1}{1000}$$

$$\log_p \frac{1}{9} = -2 \quad p = 3$$

$$28. \log_h 2 = \frac{1}{7} \quad h = 128$$

$$\log_{\frac{1}{2}} 1 = z \quad z = 0$$

$$\log_p e^2 = 2 \quad p = e$$

$$\log_6 r = 0 \quad r = 1$$

$$29. \log_{\frac{1}{100}} g = 0 \quad g = 1$$

$$\log_{\frac{1}{36}} 36 = r \quad r = -1$$

$$\log_{128} t = -\frac{1}{7} \quad t = \frac{1}{2}$$

$$\log_{\frac{1}{5}} k = -3 \quad k = 125$$

$$30. \log_z \frac{1}{5} = -1 \quad z = 5$$

$$\log_4 4 = h \quad h = 1$$

$$\log_{\frac{1}{2}} \frac{1}{512} = r \quad r = 9$$

$$\log_{\frac{1}{64}} \frac{1}{2} = v \quad v = \frac{1}{6}$$

$$31. \log_j 9 = -\frac{1}{2} \quad j = \frac{1}{81}$$

$$\log_{81} g = 0 \quad g = 1$$

$$\log_{36} \frac{1}{6} = b \quad b = -\frac{1}{2}$$

$$\log_{\frac{1}{10}} \frac{1}{100} = k \quad k = 2$$

$$32. \log_{\frac{1}{4}} l = -3 \quad l = 64$$

$$\log_{\frac{1}{e}} a = 3 \quad a = \frac{1}{e^3}$$

$$\log_m \frac{1}{16} = -2 \quad m = 4$$

$$\log_{\frac{1}{64}} 4 = s \quad s = -\frac{1}{3}$$

$$33. \log_r 100 = -2 \quad r = \frac{1}{10}$$

$$\log_7 t = 1 \quad t = 7$$

$$\log_{\frac{1}{256}} 2 = u \quad u = -\frac{1}{8}$$

$$\log_{\frac{1}{4}} \frac{1}{36} = a \quad a = 2$$

$$34. \log_{\frac{1}{25}} x = \frac{1}{2} \quad x = \frac{1}{5}$$

$$\log_{100} \frac{1}{10} = l \quad l = -\frac{1}{2}$$

$$\log_{\frac{1}{32}} u = 0 \quad u = 1$$

$$\log_q 27 = -3 \quad q = \frac{1}{3}$$

$$35. \log_{256} 256 = m \quad m = 1$$

$$\log_{128} 1 = m \quad m = 0$$

$$\log_5 x = 0 \quad x = 1$$

$$\log \frac{1}{100} = x \quad x = -2$$

$$36. \log_{512} w = 0 \quad w = 1$$

$$\log_{\frac{1}{3}} g = 3 \quad g = \frac{1}{27}$$

$$\log_{\frac{1}{e}} \frac{1}{e^3} = v \quad v = 3$$

$$\log_{\frac{1}{10}} \frac{1}{1000000} = l \quad l = 6$$

$$37. \log_y \frac{1}{128} = 1 \quad y = \frac{1}{128}$$

$$\log_{\frac{1}{10}} \frac{1}{100000} = k \quad k = 5$$

$$\log_3 h = 1 \quad h = 3$$

$$\log_{\frac{1}{10}} p = 1 \quad p = \frac{1}{10}$$

$$38. \log_j 32 = -1 \quad j = \frac{1}{32}$$

$$\log_2 v = -5 \quad v = \frac{1}{32}$$

$$\log_{\frac{1}{4}} 2 = l \quad l = -\frac{1}{2}$$

$$\log_8 \frac{1}{9} = \frac{1}{2} \quad s = \frac{1}{81}$$

$$39. \log_{36} \frac{1}{36} = n \quad n = -1$$

$$\log_{100} \frac{1}{100} = x \quad x = -1$$

$$\log_{\frac{1}{36}} g = -\frac{1}{2} \quad g = 6$$

$$\log_5 u = 2 \quad u = 25$$

$$40. \log_{1024} w = 1 \quad w = 1024$$

$$\log_{16} \frac{1}{16} = k \quad k = -1$$

$$\log_{16} 2 = k \quad k = \frac{1}{4}$$

$$\log_{\frac{1}{1000}} \frac{1}{10} = z \quad z = \frac{1}{3}$$

41. $\log_2 u = 4$ $\log_7 32 = -5$ $\log_{\frac{1}{7}} s = 2$ $\log_{\frac{1}{1000}} \frac{1}{1000} = b$	$u = 16$ $t = \frac{1}{2}$ $s = \frac{1}{49}$ $b = 1$	42. $\log_t \frac{1}{16} = 2$ $\log_9 s = -1$ $\log_{256} j = -\frac{1}{4}$ $\log_2 256 = g$	$t = \frac{1}{4}$ $s = \frac{1}{9}$ $j = \frac{1}{4}$ $g = 8$	43. $\log_{81} j = -\frac{1}{2}$ $\log_{81} 81 = n$ $\log_s \frac{1}{100000} = 5$ $\log 100 = n$	$j = \frac{1}{9}$ $n = 1$ $s = \frac{1}{10}$ $n = 2$	44. $\log_q 128 = 1$ $\log_{81} b = 0$ $\ln v = 1$ $\log_r 3 = \frac{1}{4}$	$q = 128$ $b = 1$ $v = e$ $r = 81$
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45. $\log_5 t = -1$ $\log_s \frac{1}{36} = -1$ $\log_{\frac{1}{4}} b = 3$ $\log_{256} \frac{1}{16} = p$	$t = \frac{1}{5}$ $s = 36$ $b = \frac{1}{64}$ $p = -\frac{1}{2}$	46. $\log_f 128 = -7$ $\log_{100} f = -1$ $\log_{100} 100 = p$ $\log_x 10 = -\frac{1}{3}$	$f = \frac{1}{2}$ $f = \frac{1}{100}$ $p = 1$ $x = \frac{1}{1000}$	47. $\log_{\frac{1}{3}} 9 = j$ $\log_{\frac{1}{4}} q = -3$ $\log_c 49 = 2$ $\log_{\frac{1}{81}} 3 = t$	$j = -2$ $q = 64$ $c = 7$ $t = -\frac{1}{4}$	48. $\log_{16} 4 = f$ $\log_{\frac{1}{5}} 64 = z$ $\log_{\frac{1}{5}} 1 = d$ $\log_p \frac{1}{8} = -\frac{1}{2}$	$f = \frac{1}{2}$ $z = -2$ $d = 0$ $p = 64$
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49. $\log_{36} 6 = l$ $\log_{64} z = \frac{1}{2}$ $\log_{\frac{1}{10}} 1 = p$ $\log_9 \frac{1}{9} = n$	$l = \frac{1}{2}$ $z = 8$ $p = 0$ $n = -1$	50. $\log_{\frac{1}{256}} y = 0$ $\log_{\frac{1}{8}} l = -1$ $\log_{512} q = -1$ $\log_q 1000 = 3$	$y = 1$ $l = 8$ $q = \frac{1}{512}$ $q = 10$	51. $\log_{\frac{1}{e}} 1 = k$ $\log_{\frac{1}{1024}} 1 = q$ $\log_{\frac{1}{49}} \frac{1}{7} = q$ $\log_{\frac{1}{5}} 1 = k$	$k = 0$ $q = 0$ $q = \frac{1}{2}$ $k = 0$	52. $\log_{\frac{1}{64}} 2 = b$ $\log_{512} t = -1$ $\log_{\frac{1}{16}} 1 = t$ $\log_b 100 = -1$	$b = -\frac{1}{6}$ $t = \frac{1}{512}$ $t = 0$ $b = \frac{1}{100}$
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53. $\log_{\frac{1}{3}} 3 = m$ $\log_n 16 = \frac{1}{2}$ $\log_{\frac{1}{25}} k = 1$ $\log_j 81 = 2$	$m = -1$ $n = 256$ $k = \frac{1}{25}$ $j = 9$	54. $\log_q \frac{1}{100} = 2$ $\log_t 256 = 1$ $\log_8 8 = z$ $\log_{\frac{1}{256}} \frac{1}{2} = k$	$q = \frac{1}{10}$ $t = 256$ $z = 1$ $k = \frac{1}{8}$	55. $\log_{\frac{1}{3}} r = 1$ $\ln d = 1$ $\log_6 1 = m$ $\log_{\frac{1}{2}} l = -7$	$r = \frac{1}{3}$ $d = e$ $m = 0$ $l = 128$	56. $\log_d \frac{1}{25} = 1$ $\log_m \frac{1}{2} = \frac{1}{8}$ $\log_{\frac{1}{36}} 1 = u$ $\log_{\frac{1}{16}} \frac{1}{2} = l$	$d = \frac{1}{25}$ $m = \frac{1}{256}$ $u = 0$ $l = \frac{1}{4}$
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57. $\log_b 81 = 4$ $\log_{\frac{1}{2}} \frac{1}{2} = x$ $\log_z 8 = 1$ $\log_w 2 = -\frac{1}{2}$	$b = 3$ $x = \frac{1}{3}$ $z = 8$ $w = \frac{1}{4}$	58. $\log_{\frac{1}{100}} b = -\frac{1}{3}$ $\log_{1024} \frac{1}{1024} = t$ $\log_5 q = 0$ $\log_{\frac{1}{3}} 3 = d$	$b = 10$ $t = -1$ $q = 1$ $d = -1$	59. $\log_{1024} 2 = w$ $\log_9 p = -1$ $\log_{256} \frac{1}{16} = r$ $\log_{\frac{1}{4}} 1 = f$	$w = \frac{1}{10}$ $p = \frac{1}{9}$ $r = -\frac{1}{2}$ $f = 0$	60. $\log_n 25 = 2$ $\log_4 64 = p$ $\log_{\frac{1}{8}} v = -\frac{1}{3}$ $\log_c \frac{1}{81} = 4$	$h = 5$ $p = 3$ $v = 2$ $c = \frac{1}{3}$
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61. $\log_t 9 = -2$ $t = \frac{1}{3}$
 $\log_{\frac{1}{100}} \frac{1}{10} = f$ $f = \frac{1}{2}$
 $\log_{\frac{1}{16}} 1 = r$ $r = 0$
 $\log_{\frac{1}{3}} 3 = k$ $k = -1$
62. $\log_9 d = -1$ $d = \frac{1}{9}$
 $\log_a \frac{1}{36} = 2$ $a = \frac{1}{6}$
 $\log_{1000} k = 1$ $k = 1000$
 $\log_{64} \frac{1}{8} = n$ $n = -\frac{1}{2}$
63. $\log_g 10 = \frac{1}{3}$ $g = 1000$
 $\log_{\frac{1}{2}} q = -10$ $q = 1024$
 $\log_3 27 = t$ $t = 3$
 $\log_r 7 = -1$ $r = \frac{1}{7}$
64. $\log_{\frac{1}{8}} 81 = p$ $p = -2$
 $\log_q \frac{1}{2} = \frac{1}{3}$ $q = \frac{1}{8}$
 $\log_{\frac{1}{e}} 1 = f$ $f = 0$
 $\log_{\frac{1}{5}} 5 = y$ $y = -1$
65. $\log_4 g = 0$ $g = 1$
 $\log_g 2 = -\frac{1}{9}$ $g = \frac{1}{512}$
 $\log_{\frac{1}{10}} \frac{1}{100} = n$ $n = 2$
 $\log_{\frac{1}{49}} \frac{1}{7} = n$ $n = \frac{1}{2}$
66. $\log_{\frac{1}{8}} \frac{1}{64} = s$ $s = 2$
 $\log_{256} v = \frac{1}{2}$ $v = 16$
 $\ln 1 = g$ $g = 0$
 $\log_n \frac{1}{1000} = -3$ $n = 10$
67. $\log_{64} w = -1$ $w = \frac{1}{64}$
 $\log_2 \frac{1}{16} = j$ $j = -4$
 $\log_{\frac{1}{4}} g = 2$ $g = \frac{1}{16}$
 $\log_{64} s = \frac{1}{2}$ $s = 8$
68. $\log_c 4 = -\frac{1}{4}$ $c = \frac{1}{256}$
 $\log_l 3 = \frac{1}{2}$ $l = 9$
 $\log_5 b = 1$ $b = 5$
 $\log_k 2 = \frac{1}{7}$ $k = 128$
69. $\log_4 q = -\frac{1}{2}$ $q = \frac{1}{2}$
 $\log_{\frac{1}{6}} \frac{1}{36} = r$ $r = 2$
 $\log_w 81 = 4$ $w = 3$
 $\log_8 \frac{1}{8} = g$ $g = -1$
70. $\log_{25} p = -\frac{1}{2}$ $p = \frac{1}{5}$
 $\log_{\frac{1}{4}} \frac{1}{4} = m$ $m = 1$
 $\log_{\frac{1}{6}} \frac{1}{36} = l$ $l = 2$
 $\log_{256} 256 = u$ $u = 1$
71. $\log_{\frac{1}{4}} \frac{1}{4} = -\frac{1}{2}$ $f = 16$
 $\log_{\frac{1}{2}} w = -8$ $w = 256$
 $\log a = -2$ $a = \frac{1}{100}$
 $\log_r \frac{1}{256} = 8$ $r = \frac{1}{2}$
72. $\log_{\frac{1}{2}} \frac{1}{2} = -\frac{1}{6}$ $u = 64$
 $\ln \frac{1}{e^2} = c$ $c = -2$
 $\log_{\frac{1}{5}} y = -1$ $y = 5$
 $\log_{\frac{1}{81}} s = -1$ $s = 81$
73. $\log_r \frac{1}{4} = -\frac{1}{2}$ $f = 16$
 $\ln e^3 = y$ $y = 3$
 $\log_{\frac{1}{3}} \frac{1}{27} = d$ $d = 3$
 $\log 100 = y$ $y = 2$
74. $\log_c \frac{1}{2} = -\frac{1}{10}$ $c = 1024$
 $\log_2 p = 0$ $p = 1$
 $\log_3 z = -1$ $z = \frac{1}{3}$
 $\log_r \frac{1}{128} = 7$ $r = \frac{1}{2}$
75. $\log_{\frac{1}{256}} \frac{1}{256} = c$ $c = 1$
 $\log_5 1 = y$ $y = 0$
 $\log_5 f = 3$ $f = 125$
 $\log_{32} d = 1$ $d = 32$
76. $\log_r \frac{1}{2} = -\frac{1}{5}$ $f = 32$
 $\log l = -5$ $l = \frac{1}{100000}$
 $\log_8 256 = -8$ $a = \frac{1}{2}$
 $\log_{\frac{1}{100}} \frac{1}{10} = b$ $b = \frac{1}{2}$
77. $\log_{\frac{1}{10}} 10 = b$ $b = -1$
 $\log_{64} 8 = h$ $h = \frac{1}{2}$
 $\log_8 36 = 1$ $s = 36$
 $\log_{1024} 1024 = a$ $a = 1$
78. $\log_l \frac{1}{e^4} = 4$ $l = \frac{1}{e}$
 $\log_4 \frac{1}{4} = n$ $n = -1$
 $\log_2 p = 5$ $p = 32$
 $\log_8 \frac{1}{64} = 2$ $s = \frac{1}{8}$
79. $\log_{\frac{1}{49}} q = 0$ $q = 1$
 $\log_{\frac{1}{100}} m = 0$ $m = 1$
 $\log_{\frac{1}{8}} \frac{1}{8} = -3$ $s = 2$
 $\log_{\frac{1}{16}} x = -\frac{1}{2}$ $x = 4$
80. $\log_4 4 = x$ $x = 1$
 $\log_{\frac{1}{10}} 1000 = w$ $w = -3$
 $\log_{36} q = \frac{1}{2}$ $q = 6$
 $\log_{\frac{1}{100}} 1 = p$ $p = 0$

81. $\log_{\frac{1}{64}} r = \frac{1}{2}$ $\log_{16} 1 = m$ $\log_{\frac{1}{16}} f = 0$ $\log_{1000} m = -\frac{1}{3}$	$r = \frac{1}{8}$ $m = 0$ $f = 1$ $m = \frac{1}{10}$	82. $\log_{\frac{1}{2}} \frac{1}{32} = p$ $\log_{\frac{1}{1000}} v = 0$ $\log 100 = b$ $\log_{\frac{1}{3}} \frac{1}{3} = -\frac{1}{4}$	$p = 5$ $v = 1$ $b = 2$ $l = 81$	83. $\log_{\frac{1}{49}} l = -\frac{1}{2}$ $\log_m \frac{1}{2} = -\frac{1}{10}$ $\log_{1024} 2 = a$ $\log_2 4 = r$	$l = 7$ $m = 1024$ $a = \frac{1}{10}$ $r = 2$	84. $\log_{\frac{1}{10}} u = 1$ $\log f = -6$ $\log_{\frac{1}{32}} 1 = l$ $\log_{49} y = 0$	$u = \frac{1}{10}$ $f = \frac{1}{1000000}$ $l = 0$ $y = 1$
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85. $\log_8 a = 0$ $\log_z \frac{1}{8} = 1$ $\log_{49} h = 1$ $\log_{\frac{1}{2}} 16 = t$	$a = 1$ $z = \frac{1}{8}$ $h = 49$ $t = -4$	86. $\log_{\frac{1}{10}} y = 1$ $\log_{\frac{1}{9}} \frac{1}{3} = k$ $\log_5 125 = n$ $\log_9 3 = y$	$y = \frac{1}{10}$ $k = \frac{1}{2}$ $n = 3$ $y = \frac{1}{2}$	87. $\log_{\frac{1}{10}} p = 1$ $\log_{\frac{1}{2}} 512 = h$ $\log_{\frac{1}{2}} 16 = u$ $\log_{\frac{1}{8}} \frac{1}{8} = s$	$p = \frac{1}{10}$ $h = -9$ $u = -4$ $s = 1$	88. $\log_{16} b = \frac{1}{4}$ $\log_{\frac{1}{8}} \frac{1}{8} = x$ $\log_{256} b = 1$ $\log_{\frac{1}{10}} b = 0$	$b = 2$ $x = 1$ $b = 256$ $b = 1$
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89. $\log_l 2 = \frac{1}{6}$ $\log_h 25 = -2$ $\log_m 4 = -1$ $\log_8 f = 1$	$l = 64$ $h = \frac{1}{5}$ $m = \frac{1}{4}$ $f = 8$	90. $\log_{\frac{1}{6}} 36 = n$ $\log_{\frac{1}{512}} c = -\frac{1}{9}$ $\log_{\frac{1}{27}} \frac{1}{27} = l$ $\log_{49} w = -\frac{1}{2}$	$n = -2$ $c = 2$ $l = 3$ $w = \frac{1}{7}$	91. $\log \frac{1}{100000} = v$ $\log \frac{1}{1000} = j$ $\log_{128} a = -\frac{1}{7}$ $\log_{\frac{1}{5}} 5 = r$	$v = -5$ $j = -3$ $a = \frac{1}{2}$ $r = -1$	92. $\log_4 j = 1$ $\log_{\frac{1}{1024}} r = 1$ $\log_{\frac{1}{36}} 1 = u$ $\log_{\frac{1}{4}} h = 2$	$j = 4$ $r = \frac{1}{1024}$ $u = 0$ $h = \frac{1}{16}$
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93. $\log_{\frac{1}{3}} \frac{1}{3} = a$ $\log_5 \frac{1}{25} = l$ $\log_b 8 = 3$ $\log_{32} 1 = g$	$a = 1$ $l = -2$ $b = 2$ $g = 0$	94. $\log_t \frac{1}{4} = -1$ $\log_m \frac{1}{256} = 1$ $\log_7 t = 0$ $\log_j 2 = 1$	$t = 4$ $m = \frac{1}{256}$ $t = 1$ $j = 2$	95. $\log_b 100 = -2$ $\log_{512} 1 = w$ $\log_{\frac{1}{2}} z = 5$ $\log_2 h = 4$	$b = \frac{1}{10}$ $w = 0$ $z = \frac{1}{32}$ $h = 16$	96. $\log_{32} \frac{1}{2} = g$ $\log_a 256 = -1$ $\log_q 10 = -1$ $\log_{\frac{1}{1000}} 1000 = f$	$g = -\frac{1}{5}$ $a = \frac{1}{256}$ $q = \frac{1}{10}$ $f = -1$
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97. $\log_{\frac{1}{256}} z = \frac{1}{2}$ $\log_c 8 = \frac{1}{2}$ $\log_4 \frac{1}{2} = l$ $\log_{49} d = 0$	$z = \frac{1}{16}$ $c = 64$ $l = -\frac{1}{2}$ $d = 1$	98. $\log_t e^4 = -4$ $\log_{32} s = 0$ $\log_2 w = -6$ $\log_{\frac{1}{2}} v = -3$	$t = \frac{1}{e}$ $s = 1$ $w = \frac{1}{64}$ $v = 8$	99. $\log_5 1 = j$ $\log_{\frac{1}{25}} 1 = c$ $\log l = 1$ $\log_{\frac{1}{125}} \frac{1}{125} = d$	$j = 0$ $c = 0$ $l = 10$ $d = 3$	100. $\log_{\frac{1}{5}} 1 = t$ $\log_{1000} b = \frac{1}{3}$ $\log_{\frac{1}{4}} w = 0$ $\log_{81} 81 = -1$	$t = 0$ $b = 10$ $w = 1$ $w = \frac{1}{81}$
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$$101 \log_{\frac{1}{2}} \frac{1}{2} = k$$

$$\log_{\frac{1}{5}} t = -2$$

$$\log_{16} t = 1$$

$$\log_j \frac{1}{16} = -4$$

$$k = \frac{1}{6}$$

$$t = 81$$

$$t = 16$$

$$j = 2$$

$$102 \log_2 v = 2$$

$$\log_2 k = 9$$

$$\log_{\frac{1}{256}} \frac{1}{4} = r$$

$$\log_n \frac{1}{8} = -1$$

$$v = 4$$

$$k = 512$$

$$r = \frac{1}{4}$$

$$n = 8$$

$$103 \log_m 2 = -\frac{1}{9}$$

$$\log_g \frac{1}{36} = -1$$

$$\log_v 6 = \frac{1}{2}$$

$$\log_3 1 = h$$

$$m = \frac{1}{512}$$

$$g = 36$$

$$v = 36$$

$$h = 0$$

$$104 \log_{32} 32 = p$$

$$\log_{64} \frac{1}{2} = z$$

$$\ln e = j$$

$$\log_k \frac{1}{64} = -2$$

$$p = 1$$

$$z = -\frac{1}{6}$$

$$j = 1$$

$$k = 8$$

$$105 \log_{49} \frac{1}{7} = s$$

$$\log_{\frac{1}{e^2}} \frac{1}{e^2} = b$$

$$\log_{25} 1 = a$$

$$\log_{256} \frac{1}{2} = h$$

$$s = -\frac{1}{2}$$

$$b = 2$$

$$a = 0$$

$$h = -\frac{1}{8}$$

$$106 \log_r \frac{1}{81} = -2$$

$$\log_n \frac{1}{2} = \frac{1}{6}$$

$$\log_{\frac{1}{5}} r = 2$$

$$\log_b 10 = 1$$

$$r = 9$$

$$n = \frac{1}{64}$$

$$r = \frac{1}{25}$$

$$b = 10$$

$$107 \log_{32} \frac{1}{2} = w$$

$$\log_s 10 = -\frac{1}{3}$$

$$\log_6 z = -1$$

$$\log_{\frac{1}{10}} r = 2$$

$$w = -\frac{1}{5}$$

$$s = \frac{1}{1000}$$

$$z = \frac{1}{6}$$

$$r = \frac{1}{100}$$

$$108 \log_{128} h = \frac{1}{7}$$

$$\log_{256} 4 = b$$

$$\log_l 6 = \frac{1}{2}$$

$$\log_l 9 = 2$$

$$h = 2$$

$$b = \frac{1}{4}$$

$$l = 36$$

$$t = 3$$

$$109 \log_{25} k = 0$$

$$\log_{81} \frac{1}{81} = n$$

$$\log_{\frac{1}{10}} s = 4$$

$$\log_2 m = -7$$

$$k = 1$$

$$n = -1$$

$$s = \frac{1}{10000}$$

$$m = \frac{1}{128}$$

$$110 \log_{\frac{1}{36}} l = -1$$

$$\log_{\frac{1}{2}} \frac{1}{1024} = q$$

$$\log_2 j = -1$$

$$\log_{\frac{1}{8}} 1 = d$$

$$l = 36$$

$$q = 10$$

$$j = \frac{1}{2}$$

$$d = 0$$

$$111 \log_{\frac{1}{2}} \frac{1}{2} = -\frac{1}{6}$$

$$\log_{\frac{1}{36}} a = 1$$

$$\log_{\frac{1}{512}} l = -\frac{1}{9}$$

$$\log_{\frac{1}{3}} \frac{1}{27} = t$$

$$u = 64$$

$$a = \frac{1}{36}$$

$$l = 2$$

$$t = 3$$

$$112 \log_{\frac{1}{2}} c = 2$$

$$\log_u 16 = -2$$

$$\log_s 10 = \frac{1}{3}$$

$$\log 1000000 = w$$

$$c = \frac{1}{4}$$

$$u = \frac{1}{4}$$

$$s = 1000$$

$$w = 6$$

$$113 \log_{\frac{1}{2}} \frac{1}{64} = h$$

$$\log_f 32 = 1$$

$$\log_2 b = -6$$

$$\log_{1000} h = 0$$

$$h = 6$$

$$f = 32$$

$$b = \frac{1}{64}$$

$$h = 1$$

$$114 \log_{\frac{1}{36}} n = -\frac{1}{2}$$

$$\log_{\frac{1}{7}} a = 0$$

$$\log_{\frac{1}{81}} \frac{1}{81} = b$$

$$\log \frac{1}{100000} = v$$

$$n = 6$$

$$a = 1$$

$$b = 1$$

$$v = -5$$

$$115 \log_{\frac{1}{512}} 2 = x$$

$$\log_{\frac{1}{1000}} x = -1$$

$$\log_x 25 = -2$$

$$\log_4 64 = p$$

$$x = -\frac{1}{9}$$

$$x = 1000$$

$$x = \frac{1}{5}$$

$$p = 3$$

$$116 \log_9 \frac{1}{3} = n$$

$$\log_{\frac{1}{5}} 1 = l$$

$$\log_{\frac{1}{5}} a = 3$$

$$\log_{\frac{1}{3}} h = 2$$

$$n = -\frac{1}{2}$$

$$l = 0$$

$$a = \frac{1}{125}$$

$$h = \frac{1}{9}$$

$$117 \log 100 = p$$

$$\log_{\frac{1}{9}} d = -2$$

$$\log_{\frac{1}{5}} x = 1$$

$$\log_{\frac{1}{100}} 100 = d$$

$$p = 2$$

$$d = 81$$

$$x = \frac{1}{5}$$

$$d = -1$$

$$118 \log_{\frac{1}{27}} \frac{1}{27} = f$$

$$\log_q \frac{1}{36} = 1$$

$$\log_9 \frac{1}{3} = k$$

$$\ln c = -4$$

$$f = 3$$

$$q = \frac{1}{36}$$

$$k = -\frac{1}{2}$$

$$c = \frac{1}{e^4}$$

$$119 \log_{32} m = 1$$

$$\log_{\frac{1}{256}} 4 = h$$

$$\log_{49} k = 0$$

$$\log_{\frac{1}{49}} u = 0$$

$$m = 32$$

$$h = -\frac{1}{4}$$

$$k = 1$$

$$u = 1$$

$$120 \log_9 64 = 1$$

$$\log_v \frac{1}{e^3} = -3$$

$$\log_{\frac{1}{81}} b = 0$$

$$\log_{\frac{1}{64}} z = -1$$

$$a = 64$$

$$v = e$$

$$b = 1$$

$$z = 64$$