A)

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

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

$10^{-1} = \frac{1}{10}$

$\pi^{-1} = \frac{1}{\pi}$

$\sqrt{2}^{-1} = \frac{1}{\sqrt{2}}$

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

B)

$\left(\frac{1}{3}\right)^{-1} = 3$

$\left(\frac{1}{5}\right)^{-1} = 5$

$\left(\frac{1}{8}\right)^{-1} = 8$

$\left(\frac{1}{9}\right)^{-1} = 9$

C)

$\left(\frac{2}{5}\right)^{-1} = \frac{5}{2}$

$\left(\frac{3}{2}\right)^{-1} = \frac{2}{3}$

$\left(\frac{2}{17}\right)^{-1} = \frac{17}{2}$

$\left(\frac{5}{8}\right)^{-1} = \frac{8}{5}$

D)

$4^{1/2} = 2$

$9^{1/2} = 3$

$16^{1/2} = 4$

$25^{1/2} = 5$

$8^{1/3} = 2$

$27^{1/3} = 3$

$64^{1/3} = 4$

$125^{1/3} = 5$

E)

$8^{2/3} = 4$

$16^{3/2} = 64$

$16^{3/4} = 8$

$125^{2/3} = 25$

F)

$\left(\frac{4}{9}\right)^{-3/2} = \frac{27}{8}$

$8^{-2/3} = \frac{1}{4}$

$\left(\frac{1}{16}\right)^{-3/2} = 64$

$\left(\frac{125}{27}\right)^{-2/3} = \frac{9}{25}$

$\left(\frac{16}{25}\right)^{-3/2} = \frac{125}{64}$

(G)

$\log_2(1) = 0$

$\log_2(2) = 1$

$\log_2(4) = 2$

$\log_2(8) = 3$

$\log_2(16) = 4$

$\log_2(32) = 5$

(H)

$\log_2(1/2) = -1$

$\log_2(1/4) = -2$

$\log_2(1/8) = -3$

$\log_2(1/16) = -4$

(J)

$\log_2(\sqrt[2]{2}) = 1/2$

$\log_2(\sqrt[3]{2}) = 1/3$

$\log_2(\sqrt[4]{2}) = 1/4$

(K)

$\log_2(\sqrt[3]{4}) = 2/3$

$\log_2(\sqrt[4]{8}) = 3/4$

$\log_2(\sqrt[5]{16}) = 4/5$

(L)

$\log_2\left(\frac{1}{\sqrt[4]{32}}\right) = -5/4$

$\log_2\left(\sqrt[3]{1/16}\right) = -4/3$

$\log_2\left(\sqrt[2]{1/8}\right) = -3/2$

$\log_3\left(\frac{1}{\sqrt[7]{81}}\right) = -4/7$

$\log_5\left(\sqrt[2]{125}\right) = 3/2$

(I)

$\log_{10}\left(\frac{1}{1000}\right)$,	$\log_{10}\left(\frac{1}{100}\right)$,	$\log_{10}\left(\frac{1}{10}\right)$,	$\log_{10}(1)$,	$\log_{10}(10)$,	$\log_{10}(100)$,	$\log_{10}(1,000)$
-3	-2	-1	0	1	2	3

$\log_{10}(10^n) = n$

Erase the "last" algebra on the left side of the equation by applying its inverse to the right side.

$x-2=e^{16}$

$x=e^{16}+2$

$x+3=\log_3(14)$

$x=\log_3(14)-3$

$5x=e^2-7$

$x=\frac{e^2-7}{5}$

$\frac{x}{7}=\log_e(3)+2$

$x=7(\log_e(3)+2)$

$e^x=e^2-3$

$x=\log_e(e^2-3)$

$\log_e(x)=7e^2$

$x=e^{7e^2}$

$e^x-4=27$

$e^x=31$

$\log_e(x)+2=e^6-1$

$\log_e(x)=e^6-3$

$\frac{e^x}{6}=\log_e(3)-5$

$e^x=6(\log_e(3)-5)$

$7\log_e(x)=14$

$\log_e(x)=2$

$e^{x+2}=17$

$x+2=\log_e(17)$

$\log_e(4x)=e^2+3$

$4x=e^{e^2+3}$

$e^{x+2}-7=5$

$e^{x+2}=12$

$2\log_e(5x)=e+7$

$\log_e(5x)=\frac{e+7}{2}$

$e^{3x^2-17x+2}-4=e^3$

$e^{3x^2-17x+2}=e^3+4$

$2\log_e(5x-7)=e^2+1$

$\log_e(5x-7)=\frac{e^2+1}{2}$

$5e^{17x-4}+2=8\log_3(25)-1$

$5e^{17x-4}=8\log_3(25)-3$

$2\log_e(5-4x)+17=3-e^{16}$

$2\log_e(5-4x)=-14-e^{16}$

$8e^{x+2}=6$

$e^{x+2}=3/4$

Complete the following rules for log/exp $(a>0, a\neq 1)$

$$a^x a^y = a^{x+y}$$

$$\frac{a^x}{a^y} = a^{x-y}$$

$$(a^x)^y = a^{xy}$$

$$a^0 = 1$$

$$\log_a(z) + \log_a(w) = \log_a(zw)$$

$$\log_a(z) - \log_a(w) = \log_a(z/w)$$

$$z\log_a(w) = \log_a(w^z)$$

$$\log_a(1) = 0$$

$$\log_a(a^x) = x$$

$$a^{\log_a(x)} = x$$

$$a^{-x} = \frac{1}{a^x}$$

If $n, m \in \mathbb{N}$, $a^{n/m} = \sqrt[m]{a^n} = \left(\sqrt[m]{a}\right)^n$