

$$\alpha. \log \frac{1}{100} = \log \frac{1}{10^2} = \log 10^{-2} = -2.$$

$$\beta. \log \frac{1}{1000} = \log \frac{1}{10^3} = \log 10^{-3} = -3.$$

$$\gamma. \log \frac{1}{10^{-3}} = \log 10^3 = 3.$$

$$\delta. \ln \frac{1}{e} = \ln e^{-1} = -1.$$

$$\epsilon. \ln \frac{1}{e^5} = \ln e^{-5} = -5.$$

$$\sigma\tau. \ln \frac{1}{e^{-4}} = \ln e^4 = 4.$$