

演習：誤差の評価：解答

$$\begin{aligned}\log(a + \varepsilon_a) &= \log \left\{ a \left(1 + \frac{\varepsilon_a}{a} \right) \right\} \\ &= \log a + \log \left(1 + \frac{\varepsilon_a}{a} \right) \\ &\simeq \log a + \frac{\varepsilon_a}{a} \\ &\therefore \frac{\varepsilon_a}{a}\end{aligned}$$

$$\begin{aligned}\exp(a + \varepsilon_a) &= \exp a \cdot \exp \varepsilon_a \\ &= \exp a \cdot \left(1 + \varepsilon_a + \frac{\varepsilon_a^2}{2} + \dots \right) \\ &\simeq \exp a \cdot (1 + \varepsilon_a) \\ &\therefore \exp a \cdot \varepsilon_a \\ &\quad \left(e^a \varepsilon_a \right)\end{aligned}$$