

97. 常用対数

- (1) 0 (2) 0.6020 (3) 0.6990 (4) 0.7781 (5) 0.9030
(6) 0.9542 (7) 1.1761 (8) 1.7781 (9) 1.585

次の値を計算せよ。ただし、 $\log_{10} 2 = 0.3010$, $\log_{10} 3 = 0.4771$ とする。

(1) $\log_{10} 1 = 0$

(2) $\log_{10} 4 = \log_{10} 2^2 = 2\log_{10} 2 = 2 \times 0.3010 = 0.6020$

(3) $\log_{10} 5 = \log_{10} \frac{10}{2} = \log_{10} 10 - \log_{10} 2 = 1 - 0.3010 = 0.6990$

(4) $\log_{10} 6 = \log_{10} (2 \cdot 3) = \log_{10} 2 + \log_{10} 3 = 0.3010 + 0.4771 = 0.7781$

(5) $\log_{10} 8 = \log_{10} 2^3 = 3\log_{10} 2 = 3 \times 0.3010 = 0.9030$

(6) $\log_{10} 9 = \log_{10} 3^2 = 2\log_{10} 3 = 2 \times 0.4771 = 0.9542$

(7) $\log_{10} 15 = \log_{10} \frac{3 \cdot 10}{2} = \log_{10} 3 + \log_{10} 10 - \log_{10} 2 = 0.4771 + 1 - 0.3010 = 1.1761$

(8) $\log_{10} 60 = \log_{10} (4 \cdot 15) = \log_{10} 4 + \log_{10} 15 = 0.6020 + 1.1761 = 1.7781$

(9) $\log_2 3$ (小数第4位を四捨五入せよ)

$$\log_2 3 = \frac{\log_{10} 3}{\log_{10} 2} = \frac{0.4771}{0.3010} = 1.5850 \dots \approx 1.585$$