

95. 対数の計算①

(1) 2	(2) 4	(3) 0	(4) $\frac{3}{2}$	(5) 10	(6) $\frac{1}{3}$	(7) -2	(8) $-\frac{1}{4}$
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次の式を計算せよ。

$$(1) \log_{10} 100 = \log_{10} 10^2 = 2$$

$$(2) \log_3 81 = \log_3 3^4 = 4$$

$$(3) \log_2 1 = 0$$

$$(4) \log_2 \sqrt{8} = \log_2 2^{\frac{3}{2}} = \frac{3}{2}$$

$$(5) \log_{\sqrt{2}} 32 = \frac{\log_2 32}{\log_2 \sqrt{2}} = \frac{\log_2 2^5}{\log_2 2^{\frac{1}{2}}} = \frac{5}{\frac{1}{2}} = 10$$

$$(6) \log_{64} 4 = \frac{\log_4 4}{\log_4 64} = \frac{\log_4 4}{\log_4 4^3} = \frac{1}{3}$$

$$(7) \log_{0.2} 25 = \frac{\log_5 25}{\log_5 0.2} = \frac{\log_5 5^2}{\log_5 5^{-1}} = \frac{2}{-1} = -2$$

$$(8) \log_{25} \sqrt{\frac{1}{5}} = \frac{\log_5 \sqrt{5^{-1}}}{\log_5 25} = \frac{\log_5 5^{-\frac{1}{2}}}{\log_5 5^2} = \frac{-\frac{1}{2}}{2} = -\frac{1}{4}$$