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$$\log_m n = a \quad \log_m 2n = 6 \quad a > 0 \quad [6] = ?$$

$$\frac{\log_m 2n}{\log_m n} \rightarrow \frac{2 \log_m n + 1}{\log_m n + 1} \rightarrow \frac{2a + 1}{a + 1} \rightarrow \left[2 - \frac{1}{a+1} \right] \rightarrow 2 \left[-\frac{1}{a+1} \right]$$

① = 2 - 1

$$\text{a) } y = \sqrt[n]{90n} \quad n > 0 \quad \frac{n}{\log n} \geq 0 \rightarrow \log \frac{n}{1} = 0 \quad \begin{pmatrix} 0 & 1 \\ 0 & 1 \end{pmatrix}$$

$$\text{b) } y = \log_2 (u^2 - u + 1) \quad u^2 - u - 2 > 0 \rightarrow (u-2)(u+1) > 0 \quad \begin{matrix} - & + & - \\ + & - & + \end{matrix}$$

(-∞, -1) ∪ (2, +∞)

$$\sqrt{u^2 - 1} + 1 \quad u^2 - 1 \geq 0 \rightarrow u^2 \geq 1 \rightarrow u > 1, u < -1 \quad (-∞, -1) \cup (2, +∞)$$

$$2 \log_a u + \log_a \sqrt{u} = 2 \quad n=a \rightarrow 2 \log_a u + \log_a u = 2 \rightarrow \log_a u + \log_a u = 2 \rightarrow \log_a u + \frac{1}{\log_a u} - 2 = 0$$

$$\log_a u = A \rightarrow A + \frac{1}{A} - 2 = 0 \rightarrow A^2 + 1 - 2A = 0 \rightarrow (A-1)(A-1) = 0$$

$$\log_a u = 1 \rightarrow a = u$$

$$\log 2 = x \quad \log 4 = 0.6 \quad (\log 8) u^2 + (\log 4) u - \log 18 = 0 \quad \log 8 \rightarrow \log \frac{10}{5} \rightarrow \log 2 - \log 5 \rightarrow \log 2 - \log 5 + \log 5 = 0$$

$$\log 18 \rightarrow \log 2 + \log 9 \rightarrow \log 2 + \log 3^2 \rightarrow \log 2 + 2 \log 3 = 1.1$$

$$\frac{0.6}{1} \rightarrow \frac{0.6 \times 10}{1 \times 10} = \frac{6}{10} = \frac{3}{5}$$

$$\log_v u = 2.1 \quad \log_v 8 = 0.6 \quad \log_{1/2} = ? \rightarrow \log_{1/2} 8 + \log_{1/2} 1/2$$

$$\log_{1/2} 8 \rightarrow \frac{1}{\log_2 8} = \frac{1}{\log_2 2 + \log_2 4} = \frac{1}{1 + 2} = \frac{1}{3}$$

$$\log_{1/2} 1/2 = \frac{1}{\log_2 1/2} = \frac{1}{-1} = -1$$

$$\frac{1}{3} + (-1) = -\frac{2}{3}$$

$$\frac{1}{1/4} + \frac{1}{2/18} \rightarrow \frac{4}{1} + \frac{18}{2} = 4 + 9 = 13$$

$$\log_5 5 = 1/5 \quad \log_5 10 = 1/8 \quad \log_5 2, \log_5 4 + \log_5 5 \rightarrow \frac{1}{\log_5 5} + \frac{1}{\log_5 4}$$

$$\rightarrow \frac{1}{\log_5 4 + \log_5 5} = \frac{1}{\log_5 20} \quad \log_5 20 = \frac{\log_5 4}{\log_5 5} = \frac{1/8}{1/5} = 5/8 \Rightarrow 1/5 \times 1/8 = 1/40$$

$$\frac{1}{5} + \frac{1}{40} \rightarrow \frac{1}{5} + \frac{1}{40} = \frac{8+1}{40} = \frac{9}{40} \Rightarrow \frac{40}{9} \approx 4.44$$

$$\log_5 10 = m \quad \log_5 12 = ? \rightarrow \log_5 12 \rightarrow \frac{1}{5} \log_5 12 \rightarrow \frac{1}{5} (1 + \log_5 12)$$

$$\log_5 12 = m \log_5 10 = m \Rightarrow \log_5 12 = m \Rightarrow \log_5 12 + \log_5 5 = m + 1 \Rightarrow \log_5 60 = m + 1$$

$$\frac{1}{5} (1 + \log_5 12) \rightarrow \frac{m+1}{5}$$

$$(0/1)^{n-1} = \left(\frac{1}{2}\right)^{n-1} \log_2 1$$

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

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$$\log_5 5 = a \quad \log_5 6 = \frac{1}{5} (1+a) \quad \log_5 (6-1) = ?$$

$$\log_5 6 = \frac{1}{5} (1 + \log_5 5) = \frac{1}{5} (1 + 1) = \frac{2}{5} \Rightarrow \log_5 6 = \frac{2}{5} \Rightarrow 6 = 5^{2/5}$$

$$\log_5 (6-1) = \log_5 (5^{2/5} - 1) = \log_5 1 = 0$$

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$$-2a\sqrt{2} + 6a + \frac{1}{\sqrt{2}}c = 0 \quad \frac{2a}{b}$$

$$\log 2 = \frac{2a}{b} \rightarrow \log 2 = \frac{2a}{b} \rightarrow \log \sqrt{2} = \frac{a}{b}$$

$$\left(\frac{1}{\sqrt{2}}\right)^{2 - \frac{b}{a}}$$

$$\left(\frac{1}{\sqrt{2}}\right)^{\frac{b}{a} - 2} = \log \frac{10}{\sqrt{2}} - 2$$

$$\log 2$$

$$\left(\frac{1}{\sqrt{2}}\right)^a = 2$$

$$a = \frac{b + 2}{2}$$

$$2a = b + c$$

$$\Rightarrow \frac{c}{a} = \frac{2a - b}{a}$$

$$\frac{(1.0) \log \frac{10}{\sqrt{2}}}{\sqrt{2}} = \left(\frac{1}{\sqrt{2}}\right)^{2 - \frac{b}{a}}$$