MATHS

BOOKS - MAHAVEER PUBLICATION

LOGARITHM

Question Bank

1. $2^{(\log)_2(x-3)} + 2(x-3) - 12 = 0$

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2. Write the equation in exponential form

$$3 = \log_3 27$$

3. Write the equation in exponential form

$$(-2) = \log_e \left(\frac{1}{e^2} \right)$$

4. write the equation in log form $2^{-3} = \frac{1}{8}$

5. write the equation in log form $\left(\dfrac{1}{7}\right)^{-2} = 49$

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6. solve $-15 = -8\ln(3x) + 5$

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7. $\log 2925 = 3.466125$ then find the values of $\log 29.25, \log 2.925, \log 0.002925$ and $\log 292500$

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8. Find 'a' if $\log_a 324 = 4$

9. Prove that $x^{\log y - \log z} \cdot y^{\log z - \log x} \cdot z^{\log x - \log y} = 1$

10. If $\dfrac{\log a}{b - c} = \dfrac{\log b}{c - a} = \dfrac{\log c}{a - b}$, then prove that $a^a b^b c^c = 1$.

11. Solve $\log(x + 1) = 2\log x$

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12. Show that

$$\log\left(\frac{1 + x}{1 - x}\right) = 2\left\{x + \frac{x^3}{3} + \frac{x^5}{5} + \dots\right\}$$

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13. Evaluate $\log_{10} 10000$

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14. Evaluate $\log_{10} 0.00001$

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15. Evaluate $\log_{16} 8$

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16. Evaluate $\log_2\left(\dfrac{1}{8}\right)$

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17. Evaluate $\log_2 \log_2 \log_3 81$

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18. Evaluate $\log_2 \log_2 16$

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19. Evaluate $\log_2 \sqrt{6} + \log_2 \sqrt{\dfrac{2}{3}}$

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20. Evaluate $\dfrac{\log 25 - \log 125 + \frac{1}{2}\log 625}{3\log 5}$

21. Evaluate $\log\left(\dfrac{8 \times 4\sqrt{5}}{81}\right)$

22. Evaluate $\dfrac{\log 9 - \log 3 + \frac{1}{2}\log 81}{2\log 3}$

23. $7 \log \left(\dfrac{10}{9} \right) - 2 \log \left(\dfrac{25}{24} \right) + 3 \log \left(\dfrac{81}{80} \right)$

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24. prove that

$$\log 2 + 16 \log \left(\dfrac{16}{15} \right) + 12 \log \left(\dfrac{25}{24} \right) + 7 \log \left(\dfrac{81}{80} \right) = 1$$

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25. Prove that

$$\log_e \sqrt{\dfrac{1+x}{1-x}} = x + \dfrac{x^3}{3} + \dfrac{x^5}{5} + \dfrac{x^7}{7} + \dots.$$

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26. Solve the equation

$$\log x^4 - \log x^3 = \log 5x - \log 2x$$

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27. Solve the equation

$$\log(x + 1) + \log(x - 1) = \log 3$$

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28. Solve the equation $\log(x^2 - 5) - \log x = \log 4$

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29. Solve the equation

$$\log(x - 1) + \log(x + 8) = 2\log(x + 2)$$