



MATHS

BOOKS - ARIHANT PUBLICATION

BIHAR

LOGARITHMS

Solved Examples

1. The value of $\log_4 128$ is

A. $\frac{5}{3}$

B. 4

C. $\frac{7}{2}$

D. $\frac{9}{2}$

Answer: C



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2. $\log_a b \times \log_b c \times \log_c d \times \log_d a$ is equal to

A. 2

B. 3

C. 1

D. 4

Answer: C



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3. The value of $\log(1 + 2 + 3)$ is equal to

A. $\log 2 + \log 3$

B. $\log 1 + \log 2 + \log 3$

C. $\log 1 \log 2 \log 3$

D. 0

Answer: B



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4. IF $x = \log_{2a} a$, $y = \log_{3a} 2a$, $z = \log_{4a} 3a$,

then the value of $xyz + 1$ is

A. $2yz$

B. $2zx$

C. xyz

D. 1

Answer: A



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5. If $\log_a bc = x$, $\log_b ca = y$ and $\log_c ab = z$,

then the value of $\frac{1}{x+1} + \frac{1}{y+1} + \frac{1}{z+1}$ is

equal to

A. 0

B. 1

C. 2

D. 3

Answer: B



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6. The value of

$$x^{(\log y - \log z)} \times y^{(\log z - \log x)} \times z^{(\log x - \log y)} \text{ is}$$

equal to

A. 1

B. 3

C. 0

D. 5

Answer: A



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7. If $a^2 + b^2 = 7ab$, then the value of $\log \left[\frac{1}{3}(a + b) \right]$ is

A. $\frac{1}{2} \log a \log b$

B. $\frac{1}{2} \log ab$

C. $\frac{1}{2} [\log a + \log b]$

D. $\frac{1}{2} [\log a - \log b]$

Answer: C



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8. If a , b and c are in GP, then

$\log_a x$, $\log_b x$ and $\log_c x$ will be

A. AP

B. HP

C. GP

D. None of these

Answer: B



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9. If $\log_x(8x - 3) - \log_x 4 = 2$, then the value of x is

A. $\frac{3}{2}$

B. $\frac{5}{2}$

C. 0

D. 3

Answer: A



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10. If $2 \log_8 N = p$, $\log_2 N = q$ and $q - p = 4$

then the value of N is

A. $2/6$

B. 256

C. 512

D. 32

Answer: C



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Exam Booster For Cracking Jee

1. $\log_{5\sqrt{5}} 5$ is equal to

A. $2/3$

B. $1/3$

C. $1/2$

D. 2

Answer: A



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2. The value of $\log_6(216\sqrt{6})$ is

A. $3/2$

B. $5/2$

C. $7/2$

D. $9/2$

Answer: C



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3. the value of $(0.05)^{\log_{\sqrt{20}}(0.1 + 0.01 + 0.001 + \dots)}$

A. 81

B. $1/81$

C. 20

D. $1/20$

Answer: A



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4. If $a = \log_{24} 12$, $b = \log_{36} 24$, $c = \log_{48} 36$,
then $1 + abc$ is equal to

A. $2ac$

B. $2bc$

C. $2ab$

D. None of these

Answer: B



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5. Evaluate: $81^{1/\log_5 3} + 27^{\log_9 36} + 3^{4/\log_t 9}$

A. 49

B. 625

C. 216

D. 890

Answer: D



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6. $\frac{\log_8 17}{\log_9 23} - \frac{\log_{2\sqrt{2}} 17}{\log_3 23}$ is equal to

A. 0

B. 1

C. $\frac{17}{8}$

D. $\frac{23}{17}$

Answer: A



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7. If $\log_8 m + \log_8 \frac{1}{6} = \frac{2}{3}$, then m is equal to

A. 24

B. 18

C. 12

D. 4

Answer: A



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8. If $\log_2 x \times \log_2 \frac{x}{16} + 4 = 0$, then x is equal to

A. 4

B. -4

C. $1/4$

D. 2

Answer: A



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9. If $\log x$, $\log y$ and $\log z$ are in AP, then

A. $y^2 = xz$

B. $x^2 = yz$

C. $z^2 = xy$

D. $y=xz$

Answer: A



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10. The value of $\frac{1}{\log_3 \pi} + \frac{1}{\log_4 \pi}$ is

A. greater than 2

B. less than 2

C. equal to $\frac{1}{2}$

D. equal to 0

Answer: A



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11. If $\log_a m = x$, then $\log_{1/a} \frac{1}{m}$ is equal to

A. x

B. $-x$

C. $\frac{1}{x}$

D. $\frac{-1}{x}$

Answer: A



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12. If $f(a) = \log \frac{1+a}{1-a}$ then $f\left(\frac{2a}{1+a^2}\right)$ is equal to

A. 0

B. 1

C. $f(a)$

D. $2f(a)$

Answer: D



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13. The value of

$$7\log_a \frac{16}{15} + 5\log_a \frac{25}{24} + 3\log_a \frac{81}{80} \text{ is}$$

A. $\log_a 5$

B. $\log_a 3$

C. $\log_a 2$

D. None of these

Answer: C



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14.

Simplify:

$$\frac{1}{1 + (\log)_a bc} + \frac{1}{1 + (\log)_b ca} + \frac{1}{1 + (\log)_c ab}$$

A. 0

B. 3

C. 2

D. 1

Answer: D



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15. If $\log\left(\frac{a+b}{2}\right) = \frac{1}{2}(\log a + \log b)$, then a is equal to

A. 0

B. $-b$

C. b

D. None of these

Answer: C



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16. $(1 + \log_n m) \cdot \log_{mn} x$ is equal to

A. $\log_n x$

B. $\log_m x$

C. $\log_n m$

D. $\log_x n$

Answer: A



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17. $\log_a b = \log_b c = \log_c a$, then a, b and c are such that

A. $a=b=c$

B. $a = b \neq c$

C. $a = c \neq b$

D. $b = c \neq a$

Answer: A



18. If $\log(3 + 4 + k) = \log 3 + \log 4 + \log k$,

then the value of k is

A. $\frac{11}{7}$

B. $\frac{7}{11}$

C. 7×11

D. None of these

Answer: B



19.

If

$$(\log)_{10}2 = 0.30103, (\log)_{10}3 = 0.47712,$$

then find the number of digits in $3^{12} \times 2^8$.

A. 6

B. 5

C. 8

D. 9

Answer: D



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20. $\frac{\log(x^3 + 3x^2 + 3x + 1)}{\log(x^2 + 2x + 1)}$ is equal to

A. $\frac{1}{2}$

B. 1

C. $\frac{3}{2}$

D. $\frac{2}{3}$

Answer: C



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