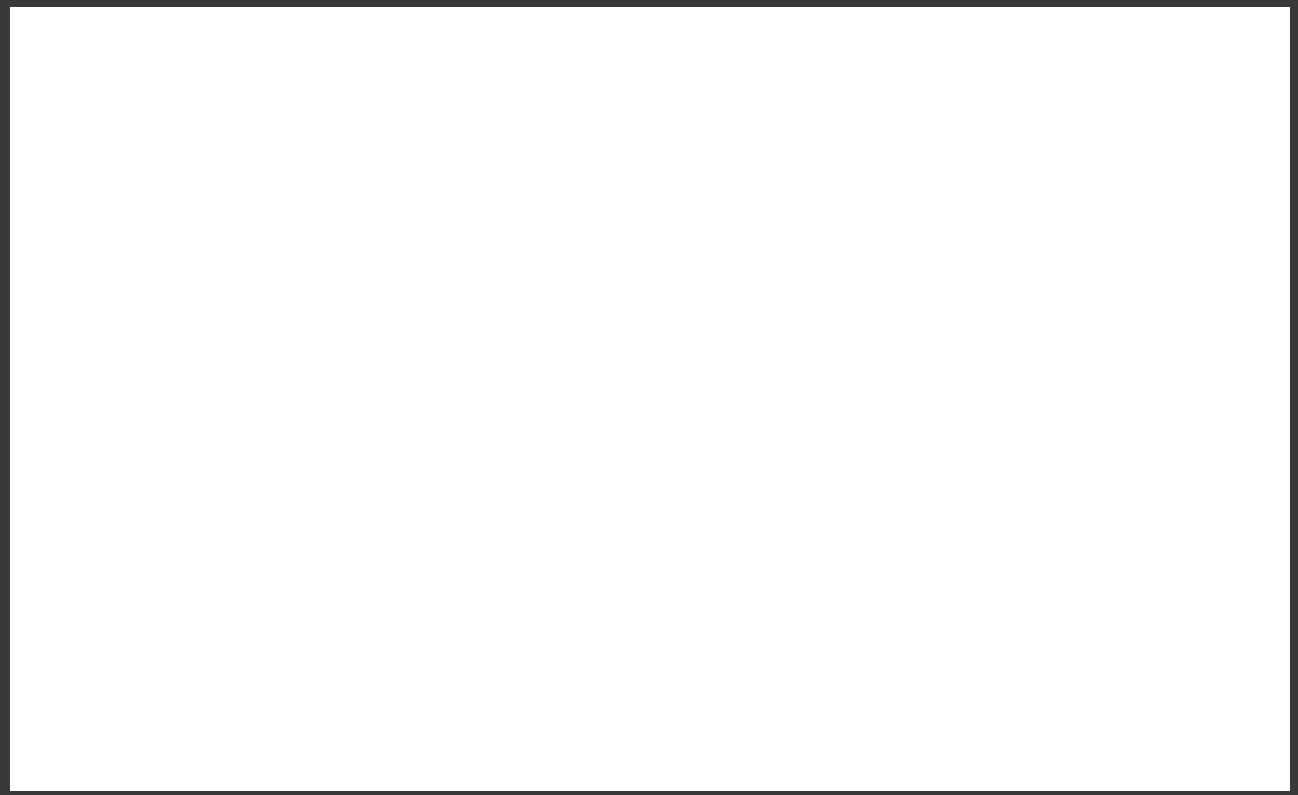
LOGARITHMS

1.The value of $\log_{343} 7$

Solution:

$\log_{7^3} 7^1 = 1/3 \log_7 7 = 1/3$.



3. Find the value of Log√8/log8
Solution:
log√8 / log8

log 8 ^ 1/2 / log 8

= 1/2 log 8 / log 8

= 1/2 .

We used the formula, log a^b = b log a

5. FIND THE VALUE OF X

$\log(x+3)+\log(x-3)=\log 72$

$\log[(x+3)(x-3)]=\log 72.$

apply the exponential function on both sides of the equation :

$(x+3)(x-3)=72$

$x^2-9=72$

$x^2=81,$

$X=+9,-9$

-9 NOT APPLICABLE SO +9

11.The value of $\log_2 3 \times \log_3 2 \times \log_3 4 \times \log_4 3$ is ?

1.1

2.2

3.3

4.4

SOLUTION:

hint($\log_a b * \log_b a = 1$)

$= \log_2 3 \times \log_3 2 \times \log_3 4 \times \log_4 3$

$= (\log 3 / \log 2) \times (\log 2 / \log 3) \times (\log 4 / \log 3) \times (\log 3 / \log 4)$

$= 1$

12.If log 2 = 0.3010, then the number of digits in 2^{64} is ?

SOLUTION

Required answer = $[64 \log_{10} 2]$

= [64 x 0.3010]

= 19.264

= 19 + 1

= 20

13.Given that $\log_{10} 2 = 0.3010$, then $\log_2 10$ is equal to ?

1.0.3010

2.0.6990

3.1000 / 301

4.699 / 301

SOLUTION

$\log_2 10 = \log 10 / \log 2$

$= 1 / \log 2$

$= 1.0000 / 0.3010$

$= 1000 / 301$

14.The value of log 9/8 - log 27/32 + log3/4 is ?

SOLUTION:

Given Exp. = log [{(9/8) / (27/32)} x 3/4)]

= log [(9/8) x (3/4) x (32/27)]

= log 1
= 0

16.If $\log_{10}2$ =0.3010 and $\log_{10}7$ = 0.8451, then find the value of $\log_{10}$ 2.8 ?

1.0.4471

2.1.4471

3.2.4471

4.14.471

SOLUTION:

$\log_{10}2.8 = \log_{10}(28/10)$

$= \log 28 - \log 10$

$= \log (7 \times 4) - \log 10$

$= \log 7 + 2 \log 2 - \log 10$

$= 0.8451 + 2 \times 0.3010 - 1$

$= 0.8451 + 0.6020 - 1$

$= 0.4471$

17.If $a^x = b$, $b^y = c$, $c^z = a$, then the value of xyz is ?

SOLUTION

$\because\ a^x = b$

$\Rightarrow \log_a b = x$

$\because\ b^y = c$

$\Rightarrow \log_b c = y$

$\because\ c^z = a$

$\Rightarrow \log_c a = z$

$\therefore\ xyz$

$= \log_a b \times \log_b c \times \log_c a$

$= 1$

18. If $\log_x 4 = 0.4$ then the value of x is ?

SOLUTION:

$\log_x 4 = \log 4 / \log x = 2/5$

$\Rightarrow 2\log 2 / \log x = 2/5$

$\Rightarrow \log x = 5\log 2 = \log 2^5$

$\Rightarrow \log x = \log 32$

$= 32$

Thank You