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CAT PRACTICE : EXPONENTS AND LOGARITHMS

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The following topics are covered in the CAT quant section from Arithmetic in Exponents and Logarithms. Detailed explanatory answers, solution videos and slide decks are also provided.

1 LOGARITHM - INEQUALITIES

If $\log_2 X + \log_4 X = \log_{0.25} \sqrt{6}$ and $x > 0$, then x is

- A. $6^{-1/6}$
- B. $6^{1/6}$
- C. $3^{-1/3}$
- D. $6^{1/3}$

Correct answer Explanatory Answer Logarithm - Inequalities

Medium

2 LOGARITHM - SIMPLE

$\log_9 (3\log_2 (1 + \log_3 (1 + 2\log_2 x))) = \frac{1}{2}$. Find x .

- A. 4
- B. $\frac{1}{2}$
- C. 1
- D. 2

Correct answer Explanatory Answer Logarithm Properties

Easy

3 LOGARTIHM - QUADRATIC EQUATIONS

If $2^{2x+4} - 17 \times 2^{x+1} = -4$, then which of the following is true?

- A. x is a positive value
- B. x is a negative value
- C. x can be either a positive value or a negative value
- D. None of these

Correct answer Explanatory Answer Exponents - Quadratic Equations

Easy

4 LOGARTIHM - ALGEBRA

If $\log_{12} 27 = a$, $\log_9 16 = b$, find $\log_8 108$.

- A. $\frac{2(a+3)}{3b}$
- B. $\frac{2(a+3)}{3a}$
- C. $\frac{2(b+3)}{3a}$
- D. $\frac{2(b+3)}{3b}$

Correct answer Explanatory Answer Logarithm manipulation

Hard

5 LOGARITHM - INEQUALITIES

$\frac{\log_3 x - 3}{\log_3 x - 5} < 0$. If a, b are integers such that $x = a$, and $x = b$ satisfy this inequation, find the maximum possible value of $a - b$.

- A. 214
- B. 216
- C. 200
- D. 203

Correct answer Explanatory Answer Logarithm - Inequalities

Hard

6 LOGARITHMS - DIFFERENT BASES

$\log_5 x = a$ (This should be read as log X to the base 5 equals a) $\log_{20} x = b$. What is $\log_x 10$?

- A. $\frac{a+b}{2ab}$
- B. $(a+b) * 2ab$
- C. $\frac{2ab}{a+b}$
- D. $\frac{a+b}{2}$

Correct answer Explanatory Answer Logarithm - Algebra

Medium

7 BASIC IDENTITIES OF LOGARITHM

$\log_3 x + \log_x 3 = \frac{17}{4}$. Find x.

- A. 3^4
- B. $3^{\frac{1}{8}}$
- C. $3^{\frac{1}{4}}$
- D. $3^{\frac{1}{3}}$

Correct answer Explanatory Answer Basic identities of Logarithm

Medium

8 BASIC IDENTITIES OF LOGARITHM

$\log_x y + \log_y x^2 = 3$. Find $\log_x y^3$.

- A. 4
- B. 3
- C. $3^{\frac{1}{2}}$
- D. $3^{\frac{1}{16}}$

Correct answer Explanatory Answer Basic identities of Logarithm

Medium

9 BASIC IDENTITIES OF LOGARITHM

If $\log_2 4 * \log_4 8 * \log_8 16 * \dots \dots \dots$ nth term = 49, what is the value of n?

- A. 49
- B. 48
- C. 34
- D. 24

Correct answer Explanatory Answer Basic identities of Logarithm

Hard

10 BASIC IDENTITIES OF LOGARITHM

If $3^{3+6+9+\dots \dots \dots x \text{ terms}} = (0.037)^{-66}$ and $(x > 70)$,
What is the value of x?

- A. 3
- B. 6
- C. 7
- D. 11

Correct answer Explanatory Answer Basic identities of Logarithm

Hard

11 BASIC IDENTITIES OF LOGARITHM

x,y,z are 3 integers in a geometric sequence such that y- x is a perfect cube.

Given, $\log_{36} x^2 + \log_6 \sqrt{y} + 3 \log_{216} y^{1/2} z = 6$. Find the value of x+y+z.

- A. 189
- B. 190
- C. 199
- D. 201

Correct answer Explanatory Answer Basic identities of Logarithm

Hard

12 BASIC IDENTITIES OF LOGARITHM

$10^{\log(3 - 10^{\log y})} = \log_2(9 - 2^y)$, Solve for y

- A. 0
- B. 3
- C. 0 and 3
- D. none of these

Correct answer Explanatory Answer Basic identities of Logarithm

Medium

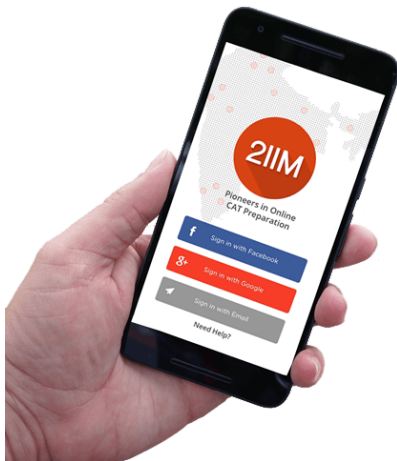
13 VALUE OF X

$4^{6+12+18+24+\dots+6x} = (0.0625)^{-84}$, what is the value of x?

- A. 7
- B. 6
- C. 9
- D. 12

[Correct answer](#)[Explanatory Answer](#)[Value of x](#)

Hard

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