CAT 2023 – Quantitative Ability

Click "How to Prepare for Quant?"

Click "CAT 2023 Quant Marathon"

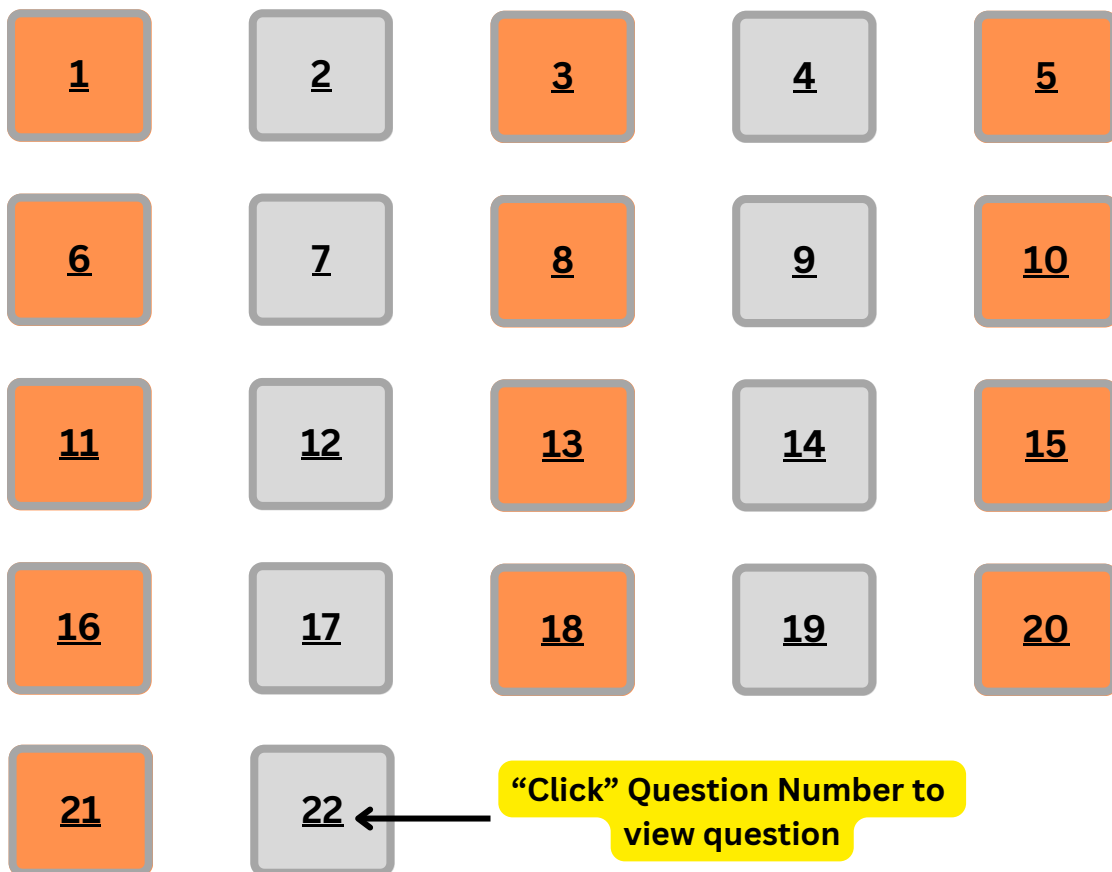**Click "Textual Solutions for 2023 CAT Quant Slot-3"**

To Download ALL Original CAT Question Paper PDF Click here

Download the free pdf of "CAT Syllabus"

To Download ALL Original CAT Question Paper PDFs Click here

CAT 2023 – Quantitative Ability

Click "Textual Solutions for 2023 CAT Quant Slot-2"

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22			

"Click" Question Number to view question

2IIM

CAT 2023 Slot - 3 – Quantitative Ability

For a real number x, if $\dfrac{1}{2}$, $\dfrac{\log_3\left(2^x-9\right)}{\log_3 4}$, and $\dfrac{\log_5\left(2^x+\frac{17}{2}\right)}{\log_5 4}$ are in an arithmetic progression, then the common difference is

A. $log_4 7$

B. $log_4\left(\dfrac{3}{2}\right)$

C. $log_4\left(\dfrac{7}{2}\right)$

D. $log_4\left(\dfrac{23}{2}\right)$

Explanation   **Video Solution**

CAT 2023 Slot - 3 – Quantitative Ability

Let n and m be two positive integers such that there are exactly 41 integers greater than 8^{m} and less than 8^{n}, which can be expressed as powers of 2. Then, the smallest possible value of n+m is

A. 14
B. 42
C. 16
D. 44

Explanation

Video Solution

2IIM

CAT 2023 Slot - 3 – Quantitative Ability

For some real numbers aa and b, the system of equations x+y=4 and (a+5)x+(b ^{2}15)y=8b has infinitely many solutions for x and y. Then, the maximum possible value of ab is

A. 15
B. 33
C. 55
D. 25

Explanation

Video Solution

For more CAT Level questions Click → **Questions.2IIM.com**
Original CAT 2023 Question Paper

CAT 2023 Slot - 3 – Quantitative Ability

If x is a positive real number such that $x^8 + \left(\frac{1}{x}\right)^8 = 47$, then the value of $x^9 + \left(\frac{1}{x}\right)^9$ is

A. $40\sqrt{5}$

B. $36\sqrt{5}$

C. $34\sqrt{5}$

D. $30\sqrt{5}$

Explanation

Video Solution

For more CAT Level questions Click → **Questions.2IIM.com**
Original CAT 2023 Question Paper

2IIM

CAT 2023 Slot - 3 – Quantitative Ability

A quadratic equation $x^2+bx+c=0$ has two real roots. If the difference between the reciprocals of the roots is 1/3, and the sum of the reciprocals of the squares of the roots is 5/9, then the largest possible value of ($b+c$) is

[Explanation]   [Video Solution]

CAT 2023 Slot - 3 – Quantitative Ability

The sum of the first two natural numbers, each having 15 factors (including 1 and the number itself), is

Explanation

Video Solution

CAT 2023 Slot - 3 – Quantitative Ability

Let n be any natural number such that $5^{n-1} < 3^{n+1}$. Then,

the least integer value of m that satisfies $3^{n+1} < 2^{n+m}$ for each such n, is

Explanation

Video Solution

CAT 2023 Slot - 3 – Quantitative Ability

Rahul, Rakshita and Gurmeet, working together, would have taken more than 7 days to finish a job. On the other hand, Rahul and Gurmeet, working together would have taken less than 15 days to finish the job. However, they all worked together for 6 days, followed by Rakshita, who worked alone for 3 more days to finish the job. If Rakshita had worked alone on the job then the number of days she would have taken to finish the job, cannot be

A. 17
B. 21
C. 16
D. 20

Explanation

Video Solution

CAT 2023 Slot - 3 – Quantitative Ability

Anil mixes cocoa with sugar in the ratio 3 : 2 to prepare mixture A, and coffee with sugar in the ratio 7 : 3 to prepare mixture B. He combines mixtures A and B in the ratio 2 : 3 to make a new mixture C. If he mixes C with an equal amount of milk to make a drink, then the percentage of sugar in this drink will be

A. 21
B. 24
C. 16
D. 17

Explanation

Video Solution

CAT 2023 Slot - 3 – Quantitative Ability

The population of a town in 2020 was 100000 . The population decreased by y% from the year 2020 to 2021 , and increased by x% from the year 2021 to 2022, where x and y are two natural numbers. If population in 2022 was greater than the population in 2020 and the difference between x and y is 10 , then the lowest possible population of the town in 2021 was

A. 74000
B. 75000
C. 72000
D. 73000

Explanation

Video Solution

CAT 2023 Slot - 3 – Quantitative Ability

A merchant purchases a cloth at a rate of Rs.100 per meter and receives 5 cm length of cloth free for every 100 cm length of cloth purchased by him. He sells the same cloth at a rate of Rs.110 per meter but cheats his customers by giving 95 cm length of cloth for every 100 cm length of cloth purchased by the customers. If the merchant provides a 5% discount, the resulting profit earned by him is

A. 4.2%
B. 15.5%
C. 16%
D. 9.7%

<div style="text-align:center">

Explanation   **Video Solution**

</div>

CAT 2023 Slot - 3 – Quantitative Ability

There are three persons A,B and C in a room. If a person D joins the room, the average weight of the persons in the room reduces by x kg. Instead of D, if person E joins the room, the average weight of the persons in the room increases by $2x$ kg. If the weight of E is 12 kg more than that of D, then the value of x is

A. 1.5
B. 2
C. 0.5
D. 1

Explanation

Video Solution

CAT 2023 Slot - 3 – Quantitative Ability

A boat takes 2 hours to travel downstream a river from port A to port B, and 3 hours to return to port A. Another boat takes a total of 6 hours to travel from port B to port A and return to port B. If the speeds of the boats and the river are constant, then the time, in hours, taken by the slower boat to travel from port A to port B is

A. $3(3 - \sqrt{5})$

B. $12(\sqrt{5} - 2)$

C. $3(3 + \sqrt{5})$

D. $3(\sqrt{5} - 1)$

Explanation

Video Solution

For more CAT Level questions Click → **Questions.2IIM.com**
Original CAT 2023 Question Paper

CAT 2023 Slot - 3 – Quantitative Ability

A fruit seller has a stock of mangoes, bananas and apples with at least one fruit of each type. At the beginning of a day, the number of mangoes make up 40% of his stock. That day, he sells half of the mangoes, 96 bananas and 40% of the apples. At the end of the day, he ends up selling 50% of the fruits. The smallest possible total number of fruits in the stock at the beginning of the day is

<div style="text-align:center">

Explanation　　　　**Video Solution**

</div>

CAT 2023 Slot - 3 – Quantitative Ability

The number of coins collected per week by two coin-collectors A and B are in the ratio 3 : 4. If the total number of coins collected by A in 5 weeks is a multiple of 7, and the total number of coins collected by B in 3 weeks is a multiple of 24, then the minimum possible number of coins collected by A in one week is

Explanation

Video Solution

2IIM

CAT 2023 Slot - 3 – Quantitative Ability

Gautam and Suhani, working together, can finish a job in 20 days. If Gautam does only 60% of his usual work on a day, Suhani must do 150% of her usual work on that day to exactly make up for it. Then, the number of days required by the faster worker to complete the job working alone is

<div style="text-align:center">

Explanation   **Video Solution**

</div>

CAT 2023 Slot - 3 – Quantitative Ability

Let $\triangle ABC$ be an isosceles triangle such that AB and AC are of equal length.

AD is the altitude from A on BC and BE is the altitude from B on AC.

If AD and BE intersect at O such that $\angle AOB = 105°$, then $\frac{AD}{BE}$ equals

A. $2sin15°$

B. $cos15°$

C. $2cos15°$

D. $sin15°$

Explanation

Video Solution

2IIM

CAT 2023 Slot - 3 – Quantitative Ability

A rectangle with the largest possible area is drawn inside a semicircle of radius 2 cm. Then, the ratio of the lengths of the largest to the smallest side of this rectangle is

A. $2 : 1$

B. $\sqrt{5} : 1$

C. $1 : 1$

D. $\sqrt{2} : 1$

2IIM

CAT 2023 Slot - 3 – Quantitative Ability

In a regular polygon, any interior angle exceeds the exterior angle by 120 degrees. Then, the number of diagonals of this polygon is

Explanation   Video Solution

CAT 2023 Slot - 3 – Quantitative Ability

The value of $1 + \left(1 + \frac{1}{3}\right)\frac{1}{4} + \left(1 + \frac{1}{3} + \frac{1}{9}\right)\frac{1}{16} + \left(1 + \frac{1}{3} + \frac{1}{9} + \frac{1}{27}\right)\frac{1}{64} + \cdots$, **is**

A. 15/3
B. 16/11
C. 27/12
D. 15/8

Explanation   Video Solution

CAT 2023 Slot - 3 – Quantitative Ability

Let $a_n = 46 + 8n$ and $b_n = 98 + 4n$ be two sequences for natural numbers $n \leq 100$.

Then, the sum of all terms common to both the sequences is

A. 15000

B. 14900

C. 14602

D. 14798

Explanation

Video Solution

2IIM

CAT 2023 Slot - 3 – Quantitative Ability

Suppose $f(x,y)$ is a real-valued function such that $f(3x+2y,2x-5y)=19x$, for all real numbers x and y. The value of x for which $f(x,2x)=27$, is

Explanation

Video Solution