CAT 2022 Question Paper Slot 2 | CAT Quants

CAT Quantitative Aptitude | CAT 2022 Question Paper

CAT 2022 Quant, unlike previous years was not dominated by Arithmetic. Though Arithematic was the most tested topic followed by Algebra. In Arithmetic, the questions were dominated by topics like **Speed-time-distance**, **Mixture and Alligations**. This year, there was a surprise. The questions from **Geometry** were relatively on the lower side as compared to the previous years. There were 8 TITA Qs this year. Overall this section was at a medium level of difficulty.

01. CAT 2022 Slot 2 - QA

In triangle ABC, altitudes AD and BE are drawn to the corresponding bases. If $\angle BAC = 45^\circ$ and $\angle ABC = \theta$, then $\frac{AD}{BE}$ equals

A. $\sqrt{2}\sin\theta$

B. $\sqrt{2}\cos\theta$

C. $\frac{(\sin\theta+\cos\theta)}{\sqrt{2}}$

D. 1

Correct Answer

Video Explanation

Explanation

02. CAT 2022 Slot 2 - QA

Working alone, the times taken by Anu, Tanu and Manu to complete any job are in the ratio 5 : 8 : 10. They accept a job which they can finish in 4 days if they all work together for 8 hours per day. However, Anu and Tanu work together for the first 6 days, working 6 hours 40 minutes per day. Then, the number of hours that Manu will take to complete the remaining job working alone is

Correct Answer

Video Explanation

Explanation

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03. CAT 2022 Slot 2 - QA

Regular polygons A and B have number of sides in the ratio 1 : 2 and interior angles in the ratio 3 : 4. Then the number of sides of B equals

Correct Answer

Video Explanation

Explanation

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04. CAT 2022 Slot 2 - QA

If a and b are non-negative real numbers such that $a + 2b = 6$, then the average of the maximum and minimum possible values of $(a + b)$ is

A. 4

B. 4.5

C. 3.5

Correct Answer

Video Explanation

D. 3

Explanation

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05. CAT 2022 Slot 2 - QA

Manu earns ₹4000 per month and wants to save an average of ₹550 per month in a year. In the first nine months, his monthly expense was ₹3500, and he foresees that, tenth month onward, his monthly expense will increase to ₹3700. In order to meet his yearly savings target, his monthly earnings, in rupees, from the tenth month onward should be

A. 4200

B. 4400

C. 4300

D. 4350

Correct Answer

Video Explanation

Explanation

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06. CAT 2022 Slot 2 - QA

There are two containers of the same volume, first container half-filled with sugar syrup and the second container half-filled with milk. Half the content of the first container is transferred to the second container, and then the half of this mixture is transferred back to the first container. Next, half the content of the first container is transferred back to the second container. Then the ratio of sugar syrup and milk in the second container is

A. 5 : 6

B. 5 : 4

C. 6 : 5

D. 4 : 5

Correct Answer

Video Explanation

Explanation

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07. CAT 2022 Slot 2 - QA

On day one, there are 100 particles in a laboratory experiment. On day n, where $n \geq 2$, one out of every n particles produces another particle. If the total number of particles in the laboratory experiment increases to 1000 on day m, then m equals

A. 19

B. 16

C. 17

D. 18

Correct Answer

Video Explanation

Explanation

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08. CAT 2022 Slot 2 - QA

The average of a non-decreasing sequence of N numbers $a_1, a_2, \ldots, a_N$ is 300 . If a_1 is replaced by $6a_1$, the new average becomes 400 . Then, the number of possible values of a_1 is

Correct Answer

Video Explanation

Explanation

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09. CAT 2022 Slot 2 - QA

Let r and c be real numbers. If r and $-r$ are roots of $5x^3 + cx^2 - 10x + 9 = 0$, then c equals

A. $-\frac{9}{2}$

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

C. -4

D. 4

Correct Answer

Video Explanation

Explanation

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10. CAT 2022 Slot 2 - QA

Suppose for all integers x, there are two functions f and g such that $f(x)+f(x-1)-1=0$ and $g(x)=x^2$. If $f\left(x^2-x\right)=5$, then the value of the sum $f(g(5))+g(f(5))$ is

Correct Answer

Video Explanation

Explanation

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11. CAT 2022 Slot 2 - QA

In an election, there were four candidates and 80% of the registered voters casted their votes. One of the candidates received 30% of the casted votes while the other three candidates received the remaining casted votes in the proportion 1 : 2 : 3. If the winner of the election received 2512 votes more than the candidate with the second highest votes, then the number of registered voters was

A. 40192

B. 60288

C. 50240

D. 62800

Correct Answer

Video Explanation

Explanation

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12. CAT 2022 Slot 2 - QA

The number of integers greater than 2000 that can be formed with the digits 0, 1, 2, 3, 4, 5, using each digit at most once, is

A. 1440

B. 1200

Correct Answer

Video

C. 1420

D. 1480

Video Explanation

Explanation

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13. CAT 2022 Slot 2 - QA

For some natural number n, assume that $(15,000)$! is divisible by $(n!)!$. The largest possible value of n is

A. 5

B. 7

C. 4

D. 6

Correct Answer

Video Explanation

Explanation

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14. CAT 2022 Slot 2 - QA

The number of distinct integer values of n satisfying $\frac{4-\log_2 n}{3-\log_4 n} < 0$, is

Correct Answer

Video Explanation

Explanation

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15. CAT 2022 Slot 2 - QA

In an examination, there were 75 questions. 3 marks were awarded for each correct answer, 1 mark was deducted for each wrong answer and 1 mark was awarded for each unattempted question. Rayan scored a total of 97 marks in the examination. If the number of unattempted questions was higher than the number of attempted questions, then the maximum number of correct answers that Rayan could have given in the examination is

Correct Answer

Video Explanation

Explanation

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16. CAT 2022 Slot 2 - QA

Five students, including Amit, appear for an examination in which possible marks are integers between 0 and 50, both inclusive. The average marks for all the students is 38 and exactly three students got more than 32. If no two students got the same marks and Amit got the least marks among the five students, then the difference between the highest and lowest possible marks of Amit is

A. 21

B. 24

C. 20

D. 22

Correct Answer

Video Explanation

Explanation

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17. CAT 2022 Slot 2 - QA

The number of integer solutions of the equation

$\left(x^2 - 10\right)^{(x^2-3x-10)} = 1$ **is**

Correct Answer

Video Explanation

Explanation

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18. CAT 2022 Slot 2 - QA

Mr. Pinto invests one-fifth of his capital at 6%, one-third at 10% and the remaining at 1%, each rate being simple interest per annum. Then, the minimum number of years required for the cumulative interest income from these investments to equal or exceed his initial capital is

Correct Answer

Video Explanation

Explanation

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19. CAT 2022 Slot 2 - QA

Consider the arithmetic progression $3, 7, 11, \ldots$ and let A_n denote the sum of the first n terms of this progression. Then the value of $\frac{1}{25}\sum_{n=1}^{25} A_n$ is

A. 404

B. 442

C. 455

D. 415

Correct Answer

Video Explanation

Explanation

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20. CAT 2022 Slot 2 - QA

Let $f(x)$ be a quadratic polynomial in x such that $f(x) \geq 0$ for all real numbers x. If $f(2) = 0$ and $f(4) = 6$, then $f(-2)$ is equal to

A. 12

B. 36

C. 24

D. 6

Correct Answer

Video Explanation

Explanation

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21. CAT 2022 Slot 2 - QA

The length of each side of an equilateral triangle ABC is 3 cm. Let D be a point on BC such that the area of triangle ADC is half the area of triangle ABD. Then the length of AD, in cm, is

A. $\sqrt{6}$

B. $\sqrt{5}$

C. $\sqrt{8}$

D. $\sqrt{7}$

Correct Answer

Video Explanation

Explanation

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22. CAT 2022 Slot 2 - QA

Two ships meet mid-ocean, and then, one ship goes south and the other ship goes west, both travelling at constant speeds. Two hours later, they are 60 km apart. If the speed of one of the ships is 6 km per hour more than the other one, then the speed, in km per hour, of the slower ship is

A. 12

B. 18

C. 20

D. 24

Correct Answer

Video Explanation

Explanation
