

CAT 2022 Question Paper Slot 3 | CAT Quants

CAT Question Paper / CAT-
2022-Slot3-Quants

CAT Quantitative Aptitude | CAT 2022 Question Paper

CAT 2022 Quant, unlike previous years was not dominated by Arithmetic. Though Arithmetic 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.

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01. CAT 2022 Slot 3 - QA

Suppose k is any integer such that the equation $2x^2 + kx + 5 = 0$ has no real roots and the equation $x^2 + (k - 5)x + 1 = 0$ has two distinct real roots for x . Then, the number of possible values of k is

- A. 7
- B. 8
- C. 9
- D. 13

Correct Answer

Video
Explanation

Explanation

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02. CAT 2022 Slot 3 - QA

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The minimum possible value of $\frac{x^2-6x+10}{3-x}$, for $x < 3$, is

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

Correct Answer

Video
Explanation

Explanation

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what to
expect in
CAT

03. CAT 2022 Slot 3 - QA

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Bob can finish a job in 40 days, if he works alone. Alex is twice as fast as Bob and thrice as fast as Cole in the same job. Suppose Alex and Bob work together on the first day, Bob and Cole work together on the second day, Cole and Alex work together on the third day, and then, they continue the work by repeating this three-day roster, with Alex and Bob working together on the fourth day, and so on. Then, the total number of days Alex would have worked when the job gets finished, is

Correct Answer

Video
Explanation

Explanation

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04. CAT 2022 Slot 3 - QA

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A glass contains 500 cc of milk and a cup contains 500 cc of water. From the glass, 150 cc of milk is transferred to the cup and mixed thoroughly. Next, 150 cc of this mixture is transferred from the cup to the glass. Now, the amount of water in the glass and the amount of milk in the cup are in the ratio

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- A. 3 : 10
- B. 10 : 3
- C. 1 : 1
- D. 10 : 13

Correct Answer

Video

Explanation

Explanation

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05. CAT 2022 Slot 3 - QA

In an examination, the average marks of students in sections A and B are 32 and 60, respectively. The number of students in section A is 10 less than that in section B. If the average marks of all the students across both the sections combined is an integer, then the difference between the maximum and minimum possible number of students in section A is

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Correct Answer

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Explanation

Explanation

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06. CAT 2022 Slot 3 - QA

Let r be a real number and

$$f(x) = \begin{cases} 2x - r & \text{if } x \geq r \\ r & \text{if } x < r \end{cases} \text{ . Then, the equation}$$

$f(x) = f(f(x))$ holds for all real values of x where

- A. $x \leq r$
- B. $x \geq r$
- C. $x > r$
- D. $x \neq r$

Correct Answer

Video

Explanation

Explanation

07. CAT 2022 Slot 3 - QA

Suppose the medians BD and CE of a triangle ABC intersect at a point O. If area of triangle ABC is 108 sq. cm., then, the area of the triangle EOD, in sq. cm., is

Correct Answer

Video
Explanation

Explanation

08. CAT 2022 Slot 3 - QA

The arithmetic mean of all the distinct numbers that can be obtained by rearranging the digits in 1421, including itself, is

- A. 2442
- B. 2222
- C. 3333
- D. 2592

Correct Answer

Video
Explanation

Explanation

09. CAT 2022 Slot 3 - QA

Nitu has an initial capital of ₹20,000. Out of this, she invests ₹8,000 at 5.5% in bank A, ₹5,000 at 5.6% in bank B and the remaining amount at $x\%$ in bank C, each rate being simple interest per annum. Her combined annual interest income from these investments is equal to 5% of the initial capital. If she had invested her entire initial capital in bank C alone, then her annual interest income, in rupees, would have been

- A. 900
- B. 700
- C. 1000

Correct Answer

Video
Explanation

D. 800

Explanation

10. CAT 2022 Slot 3 - QA

Two cars travel from different locations at constant speeds. To meet each other after starting at the same time, they take 1.5 hours if they travel towards each other, but 10.5 hours if they travel in the same direction. If the speed of the slower car is 60 km/hr, then the distance traveled, in km, by the slower car when it meets the other car while traveling towards each other, is

- A. 150
- B. 100
- C. 90
- D. 120

Correct Answer

Video
Explanation

Explanation

11. CAT 2022 Slot 3 - QA

If $\left(\sqrt{\frac{7}{5}}\right)^{3x-y} = \frac{875}{2401}$ and $\left(\frac{4a}{b}\right)^{6x-y} = \left(\frac{2a}{b}\right)^{y-6x}$, for all non-zero real values of a and b , then the value of $x + y$ is

Correct Answer

Video
Explanation

Explanation

12. CAT 2022 Slot 3 - QA

Moody takes 30 seconds to finish riding an escalator if he walks on it at his normal speed in the same direction. He

takes 20 seconds to finish riding the escalator if he walks at twice his normal speed in the same direction. If Moody decides to stand still on the escalator, then the time, in seconds, needed to finish riding the escalator is

Correct Answer

Video
Explanation

Explanation

13. CAT 2022 Slot 3 - QA

Consider six distinct natural numbers such that the average of the two smallest numbers is 14, and the average of the two largest numbers is 28. Then, the maximum possible value of the average of these six numbers is

- A. 22.5
- B. 23.5
- C. 24
- D. 23

Correct Answer

Video
Explanation

Explanation

14. CAT 2022 Slot 3 - QA

If $(3 + 2\sqrt{2})$ is a root of the equation $ax^2 + bx + c = 0$, and $(4 + 2\sqrt{3})$ is a root of the equation $ay^2 + my + n = 0$, where a, b, c, m and n are integers, then the value of $\left(\frac{b}{m} + \frac{c-2b}{n}\right)$ is

- A. 3
- B. 1
- C. 4
- D. 0

Correct Answer

Video
Explanation

Explanation

15. CAT 2022 Slot 3 - QA

If $c = \frac{16x}{y} + \frac{49y}{x}$ for some non-zero real numbers x and y , then c cannot take the value

- A. -70
- B. 60
- C. -50
- D. -60

Correct Answer

Video
Explanation

Explanation

16. CAT 2022 Slot 3 - QA

A group of N people worked on a project. They finished 35% of the project by working 7 hours a day for 10 days. Thereafter, 10 people left the group and the remaining people finished the rest of the project in 14 days by working 10 hours a day. Then the value of N is

- A. 23
- B. 140
- C. 36
- D. 150

Correct Answer

Video
Explanation

Explanation

17. CAT 2022 Slot 3 - QA

The average of all 3-digit terms in the arithmetic progression 38, 55, 72, ..., is

Correct Answer

Video
Explanation

Explanation

18. CAT 2022 Slot 3 - QA

In a triangle ABC , $AB = AC = 8\text{cm}$. A circle drawn with BC as diameter passes through A . Another circle drawn with center at A passes through B and C . Then the area, in sq. cm, of the overlapping region between the two circles is

- A. $16(\pi - 1)$
- B. $32(\pi - 1)$
- C. 32π
- D. 16π

Correct Answer

Video
Explanation

Explanation

19. CAT 2022 Slot 3 - QA

A school has less than 5000 students and if the students are divided equally into teams of either 9 or 10 or 12 or 25 each, exactly 4 are always left out. However, if they are divided into teams of 11 each, no one is left out. The maximum number of teams of 12 each that can be formed out of the students in the school is

Correct Answer

Video
Explanation

Explanation

20. CAT 2022 Slot 3 - QA

A donation box can receive only cheques of ₹100, ₹250, and ₹500. On one good day, the donation box was found to contain exactly 100 cheques amounting to a total sum of ₹15250. Then, the maximum possible number of cheques of ₹500 that the donation box may have contained, is

Correct Answer

**Video
Explanation**

Explanation

21. CAT 2022 Slot 3 - QA

Two ships are approaching a port along straight routes at constant speeds. Initially, the two ships and the port formed an equilateral triangle with sides of length 24 km. When the slower ship travelled 8 km, the triangle formed by the new positions of the two ships and the port became right-angled. When the faster ship reaches the port, the distance, in km, between the other ship and the port will be

- A. 8
- B. 12
- C. 6
- D. 4

Correct Answer

**Video
Explanation**

Explanation

22. CAT 2022 Slot 3 - QA

The lengths of all four sides of a quadrilateral are integer valued. If three of its sides are of length 1 cm, 2 cm and 4 cm, then the total number of possible lengths of the fourth side is

- A. 6
- B. 4
- C. 5
- D. 3

Correct Answer

**Video
Explanation**

Explanation
