

LearnTheta - CAT 2024 Quant Mock Test 4**Duration: 40 Mins**

Q.1 At inflation rate 20%, how much will a house worth 60 lakhs now be worth in 3 years?

- A. 80 lakhs
- B. 90 lakhs
- C. 96 lakhs
- D. More than a crore

Q.2 If α and β are the roots of the equation $ax^2 + bx + c = 0$, then which equation will have roots $(\alpha\beta + \alpha + \beta)$ and $(\alpha\beta - \alpha - \beta)$?

- A. $a^2x^2 + 2acx + c^2 - b^2 = 0$
- B. $a^2x^2 + 2acx + c^2 + b^2 = 0$
- C. $a^2x^2 - 2acx + c^2 - b^2 = 0$
- D. $a^2x^2 - 2acx + c^2 + b^2 = 0$

Q.3 Your watch was correct at 1pm, but then it began to lose 30 minutes each hour. It now shows 5pm but it stopped 5 hours ago. What is the correct time now?

- A. 10:30 pm
- B. 12 midnight
- C. 2 am
- D. 2:30 am

Q.4 How many distinct ordered pairs of positive integers (x,y) such that the least common multiple of x & y is 1,000?

- A. 9
- B. 19
- C. 49
- D. 99

Q.5 Find x if $\log_2 3 \cdot \log_3 4 \cdot \log_4 5 \dots \log_n (n + 1) = 11$

- A. 2047
- B. 1025
- C. 1023
- D. 513

Learn(θ)

Q.6 A container was originally filled with original Vietnamese coffee. An individual regularly removed 20% of the coffee and substituted it with cheap coffee dust. This procedure was carried out four times, resulting in only 512 grams of Vietnamese coffee remaining, remaining being coffee dust. What was the initial quantity of Vietnamese coffee in the container?

- A. 1 kg
- B. 1.25 kg
- C. 1.5 kg
- D. 2 kg

Q.7 What is the minimum value of the function, given x is a real number

$$f(x) = |x - 2| + |3 - x| + |4 - x|$$

Q.8 A company sells bags whose prices i.e., cost price and selling price are the multiples of either 13, 14, 15, 16, 17, 18 or 19, starting from Rs. 399 to Rs.699 (i.e, $399 < \text{CP/SP} < 699$). What can be the maximum profit of the company?

- A. 292
- B. 298
- C. 302
- D. 304

Q.9 What is the product of the roots of the equation $x^3 - 6x^2 + 11x - 6 = 0$

- A. 1
- B. -2
- C. -3
- D. 6

Q.10 Every day, a boy is picked up by his mother at the train station after school, and she drives him home. She always arrives right on time to pick him up. However, one day the boy takes an earlier train and reaches the station an hour before the usual time. Without waiting, he starts walking home following the same path his mother drives. On her way to the station, the mother spots him and drives him the rest of the way home. They reach home 20 minutes earlier than their normal time. What is the duration of the boy's walk?

- A. 40 min
- B. 45 min
- C. 50 min
- D. 60 min

Learn(θ)

Q.11 Find the value of $\sqrt{6 + (\sqrt{6 + (\sqrt{6 + \dots})}}$

Q.12 A high school committee is selling tickets for a play. When the tickets are Rs 7, they will set 2000 tickets. The Grade 12 maths class did some research and found that for every Rs 0.1 increase in ticket price, 40 fewer people will purchase a ticket. If the auditorium capacity for this play is 2600 people, and the play requires a minimum of 1600 people to perform, what price should the school committee set the ticket price at to maximise revenue while meeting these restrictions?

Q.13 The average earning of a mechanic for the first-four days of a week is Rs 18 and for the last four days is Rs 22. If he earns Rs 20 on the fourth day, his average earning for the whole week is ?

- A. 19.5
- B. 20
- C. 20.5
- D. 21.5

Q.14 A train starts from Chennai at 6:00 a.m. and reaches Bengaluru at 10 a.m. The other train starts from Bengaluru at 8 a.m. and reaches Chennai at 11:30 a.m. If the distance between Chennai and Bengaluru is 200 km, then at what time did the two trains meet each other?

- A. 7:46 am
- B. 8:16 am
- C. 8:46 am
- D. 8:56 am

Q.15 Amar can do a piece of work in 45 days, but Bhanu can do the same work in 5 days less than Amar, when working alone. Amar and Bhanu both started the work together but Bhanu left after some days and Amar finished the remaining work in 56 days with half of his efficiency but he did the work with Bhanu with his complete efficiency. For how many days they had worked together?

- A. 6
- B. 8
- C. 9
- D. 10

Learn(θ)

Q.16 Rohan allocated half of his total savings to a bond offering simple interest for a period of two years, which yielded him an interest amount of Rs. 1100. He invested the other half in a different bond with compound interest, compounded annually, for the same duration and at an identical interest rate, earning him Rs. 1210 in interest. What was the original amount of Rohan's savings before he made these investments?

- A. 5000
- B. 5100
- C. 5300
- D. 5500

Q.17 Find p,q if (2,3) is circumcentre of the triangle surrounded by sides $2x+y=0$, $x-y-3=0$ and $x+py=q$

- A. 8, 39
- B. 8, 36
- C. 9, 38
- D. 9, 36

Q.18 What is the area of the largest triangle that can fit into a rectangle with length and width of 'a' and 'b' units respectively?

- A. $ab/2$
- B. $ab/3$
- C. $3ab/4$
- D. $2ab/3$

Q. 19 Given $X = 2^{65}$ and $Y = (2^{64} + 2^{63} + 2^{62} + \dots + 2^0)$, which of the following is true?

- A. Y is larger than X by 2
- B. X and Y are equal
- C. Y is larger than X by 1
- D. X is larger than Y by 1

Q. 20 150 men were employed to finish a task within a specific number of days. However, four men left on the second day, and an additional four left on the third day, continuing in this pattern. Due to this, the job took 8 extra days to complete. How many days did it ultimately take to finish the work?

- A. 23
- B. 24
- C. 25
- D. 26

Learn(Θ)

Q.21 A circle is inscribed in an equilateral triangle and a square is inscribed in that circle. The ratio of the areas of the triangle and the square is

- A. $\sqrt{3} : 4$
- B. $\sqrt{3} : 8$
- C. $3\sqrt{3} : 2$
- D. $3\sqrt{3} : 1$

Q.22 If α and β are the roots of the equation $Px^2 + Qx + R = 0$, then what is the value of $\frac{1}{\alpha^2} + \frac{1}{\beta^2} + \frac{\alpha}{\beta} + \frac{\beta}{\alpha}$

- A. $\frac{(Q^2 - 2P)(2R + P)}{PR^2}$
- B. $\frac{(Q^2 - 2P)(2R + 2P)}{P^2R^2}$
- C. $\frac{(Q^2 - 2R)(2P + R)}{P^2R^2}$
- D. $\frac{(Q^2 - 2PR)(R + P)}{PR^2}$

Answers

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

Please use the following table to calculate a tentative percentile based on your score. For every correct response, 3 points are awarded. Incorrect answers to multiple-choice questions result in a deduction of 1 point, whereas incorrect answers to non-multiple-choice questions do not affect the score.

Target Percentile	Score
99	25
90	16
80	11
70	8