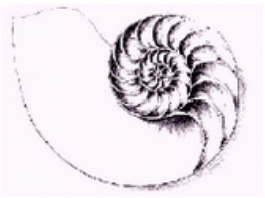
Quant Challenge for CAT 2008
by pradeep pandey - Monday, 28 April 2008, 04:16 PM



If you are a serious CAT 2008 student, then you cannot escape the charm of TG.com. If you are a serious CAT trainer teaching at any coaching institute, then also you cannot avoid peeking at TG for good questions to cover in your classes. Whatever may be the case, you would be spreading education around you in your own way. The best thing about education in India is that it is touches everyone. And once education touches someoneâ€™s soul it permeates through his entire life and touches everyone around him in some way or the other. No matter which part of the world you are, we hope that TG.com helps you become a better person. In this regard, we continue with our Quant Challenge Series, prepared by Mr. Pradeep Pandey, an experienced CAT trainer in the industry. The pains that Mr. Pandey takes to create his questions can be easily gauged from their quality. While you gear up to attack the CAT paper in November, solving these questions will help you boost your confidence. Share these problems with your fellow CAT aspirants over a cup of coffee and enjoy some good problem-solving sessions.- *Total Gadha*

1. Given, $Z = 5x^4 + 2y^4$ where x and y are any two integers. If Z is divided by 10 then which of the following can't be the remainder?
   1) 0 2) 2 3) 5 4) 6 5) 7

2. An elevator starts at the basement with 9 people (excluding the elevator operator) and discharges them all by the time it reaches the top floor, number 6. In now many ways could the operator have perceived the people leaving the elevator if all the people book alike to him?
   1) 2002 2) 1009 3) 1576 4) 2492 5) None of these

3. Find the area of the biggest possible triangle whose base is 10 cm and perimeter 36 cm.
   1) 48 cm^2 2) 54 cm^2 3) 66 cm^2 4) 45 cm^2 5) 60 cm^2

4. A cone has a circular base of radius 2 units and vertex of height 5 units directly above the centre of the circle. A cube is formed directly above the centre of the circle. The cube has four vertices in the base and four on the sloping sides. What is the approximate length of each side of the cube?
   1) 2.35 cm 2) 4.15 cm 3) 3.25 cm 4) 2.75 cm 5) 2.22 cm

5. Given that N = abcdefghij is a ten-digit number. All of the digits (a, b, c, d, ...) are different from one another. If 11111 divides it evenly, how many different possibilities are there for abcdefghij?
   1) 3024 2) 3456 3) 5076 4) 1692 5) Can't say

6. In the above problem, find the remainder if the greatest possible abcdefghij is divided by 8?
   1) 2 2) 3 3) 4 4) 7 5) Can't say

7. A book shopkeeper gives a discount of 30% on a book and makes a profit of 20%. If the book shopkeeper had given a discount of Rs 400, he would have incurred a loss of 20%. Find the marked price (in Rs) of the book.
   1) 750 2) 600 3) 820 4) 900 5) 540

8. How many pairs of positive integers (a, b) are there such that a and b have no common factor greater than 1 and $\frac{a}{b} + \frac{14b}{9a}$ is an integer?
   1) 1 2) 2 3) 3 4) 4 5) More than 4

9. A sphere is inscribed in a cube that has a surface area of 24 m^2. A second cube is then inscribed within the sphere. What is the surface area in square metres of the inner cube?
   1) 6 2) 8 3) 4 4) 12 5) None of these

10. Let a, b, c, d and e be distinct integers such that (6 - a)(6 - b)(6 - c)(6 - d)(6 - e) = 45. What is a + b + c + d + e?
    1) 25 2) 28 3) 27 4) 16 5) None of these

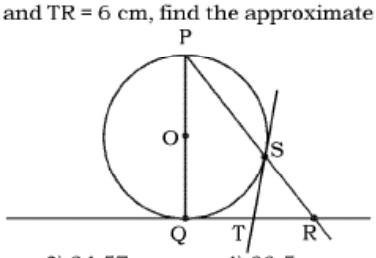
11. The moving objects A and B are moving towards each other from two distant point A and B respectively towards each other. After meeting at some intermediate point between P and Q, A goes to Q and returns back for P, and B goes to point P and returns back to Q. They continue their journey in the same fashion until they meet at the point P. Find the distance covered by A up to just before they meet at point P.
    Given that the distance between P and Q is 55 km and speeds of A and B are 3km/hr and 2.5 km/hr respectively.
    1) 270 km 2) 215 km 3) 240 km 4) 330 km 5) None of these

12. A parallelogram is divided into 19 regions of equal area by drawing line segments parallel to one of its diagonals. What is the ratio of the longest line segment to one the shortest one?
    1) 3 : 2 2) 4 : 3 3) 3 : 1 4) 5 : 2 5) 6 : 5

13. The following list of numbers is given: 21, 40, 59, 78, 97, ..., 4562. Find the number of integers in this list whose HCF with 240 is not more than 1.
    1) 40 2) 41 3) 64 4) 78 5) 112

14. There is a certain number of chairs inside the hall. It the chairs are arranged 5 chairs per row, 7 chairs per row, and 8 chairs per row then 3, 2 and 5 chairs remain respectively. It is known that there are more than 600 chairs and less than 700 chairs inside the hall. Find the number of chairs remaining if the chairs are arranged 13 chairs per row.
    1) 2 2) 3 3) 4 4) 5 5) 9

15. In the following figure, PQ is the diameter of the circle with centre O and QR is the tangent to the circle at Q. PR intersects the circle at S and the tangent to the circle at S intersects QR at T. If the diameter of the circle is 20 cm and TR = 6 cm, find the approximate length of the line segment PR.



1) 33.2 cm 2) 26.6 cm 3) 24.57 cm 4) 22.5 cm 5) 21 cm

Mr. Pradeep Pandey is an experienced quant trainer of MBA aspirants and author of the book â€œ**Quantitative Aptitude for CAT**.â€ Mr. P. Pande creator of many interesting mathematics and data interpretation problems and he has graciously agreed to share many of them with students on TC their CAT preparation.