Quantitative Ability (Part 5 of 9)

Doorsteptutor material for CMAT is prepared by world's top subject experts: get questions, notes, tests, video lectures and more [https://www.doorsteptutor.com/Exams/CMAT/]- for all subjects of CMAT.

Directions: Answer these questions on the basis of the information given below:

Cities A and B are in different time zones. A is located 3000 km east of B. The table below describes the schedule of an airline operating non-stop flights between A and B. All the times indicated are local and on the same day.

Departure	Departure	Arrival	Arrival
City	Time	City	Time
B	8: 00 AM	A	3: 00 PM
A	4: 00 PM	B	8: 00 PM

Table Supporting: Quantitative Ability (Part 5 of 9)

Assume that planes cruise at the same speed in both directions. However, the effective speed is influenced by a steady wind blowing from east to west at 50 km per hour.

1. What is the time difference between A and B?
   a. 1 hour
   b. 1 hour and 30 minutes
   c. 2 hours
   d. 2 hours and 30 minutes
   e. Cannot be determined
   ○ Answer: a

2. What is the plane's cruising speed in km per hour?
   a. 500
   b. 700
   c. 550
   d. 600
   e. Cannot be determined.
   ○ Answer: c

3. Consider four digit numbers for which the first two digits are equal and the last two digits are also equal. How many such numbers are perfect squares?

   a. 1

   b. 3

   c. 2

   d. 4

   e. 0

   ○ Answer: a

4. In a tournament, there are n teams T1, T2, ... Tn, with n > 5. Each team consists of k players, k > 3. The following pairs of teams have one player in common: T1 & T2, T2 & T3, ... T n − 1 & Tn, and Tn & T1. No other pair ofteams has any player in common. How many players are participating in the tournament, considering all the n teams together?

   a. (n − 1) (k − 1)

   b. n (k − 1)

   c. k (n − 1)

   d. n (k − 2)

   e. k (n − 2)

   ○ Directions: Answer these questions on the basis of the information given below:

   ○ Let a1 = p and b1 = q, where p and q are positive quantities. Define an = pbn-1, bn = qbn-1, for even n > 1, and an = pan-1, bn = qan-1, for odd n > 1.

      ▪ Answer: b

5. Which of the following best describes an + bn for even n?

   a. $q \, (pq)^{\frac{1}{2} n - 1} (p + q)^{\frac{1}{2} n}$

   b. $q \, (pq)^{\frac{1}{2} n - 1} (p + q)$

   c. $qp^{\frac{1}{2} n - 1} (p + q)$

   d. $q^{\frac{1}{2} n} (p + q)$

   e. $q^{\frac{1}{2} n} (p + q)^{\frac{1}{2} n}$

   ○ Answer: b

6. If $p = \frac{1}{3}$ and $q = \frac{2}{3}$, then what is the smallest odd n such that an + bn < 0.01?

   a. 15

   b. 7

   c. 13

   d. 11

   e. 9

- Answer: e

- Answer: e