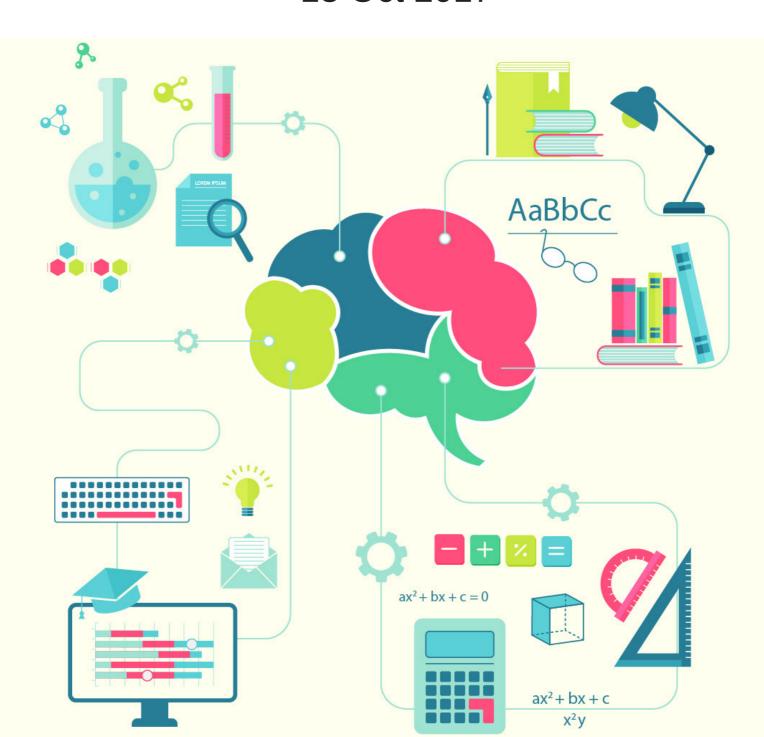# cracku

HCF and LCM CAT Questions

13 Oct 2017

Question 1:

Number of students who have opted for subjects A, B and C are 60, 84 and 108 respectively. The examination is to be conducted for these students such that only the students of the same subject are allowed in one room. Also the number of students in each room must be same. What is the minimum number of rooms that should be arranged to meet all these conditions?
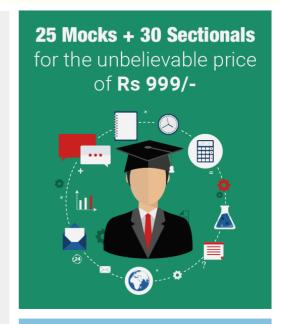
A. 28

B. 60

C. 12

D. 21

HCF and LCM Tricks for CAT

Question 2:

A red light flashes three times per minute and a green light flashes five times in 2 min at regular intervals. If both lights start flashing at the same time, how many times do they flash together in each hour?

A. 30

B. 24

C. 20

D. 60

Question 3:

A is the set of positive integers such that when divided by 2, 3, 4, 5, 6 leaves the remainders 1, 2, 3, 4, 5 respectively. How many integers between 0 and 100 belong to set A?
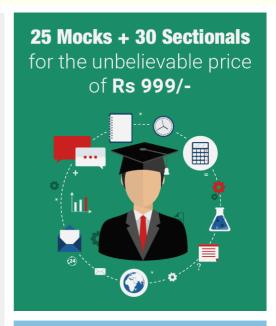
A. 0

B. 1

C. 2

D. None of these

CAT Quantitative Aptitude PDF

Question 4:

In Sivakasi, each boy's quota of match sticks to fill into boxes is not more than 200 per session. If he reduces the number of sticks per box by 25, he can fill 3 more boxes with the total number of sticks assigned to him. Which of the following is the possible number of sticks assigned to each boy?

A. 200

B. 150

C. 125

D. 175

Question 5:

A new flag is to be designed with six vertical stripes using some or all of the colours yellow, green, blue and red. Then, the number of ways this can be done such that no two adjacent stripes have the same colour is

A. 12 × 81

B. 16 × 192

C. 20 × 125

D. 24 × 216

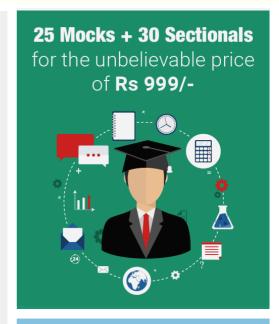## Verbal Ability for CAT
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Solutions:

1) Answer (D)

As we can see here that total number of students are = 60+84+108 = 252

Now given condition is that in one room only the students of the same subject can be there and the number of rooms should be minimum that means the number of students in a particular room will be maximum.

This Maximum number of students will be HCF (Highest common factor) of 60, 84 and 108 and that will be 12

Hence, number of rooms will be = 252/12 = 21

2) Answer (A)

A red light flashes three times per minute and a green light flashes five times in 2 min at regular intervals. So red light fashes after every 1/3 min and green light flashes every 2/5 min. LCM of both the fractions is 2 min .

Hence they flash together after every 2 min. So in an hour they flash together 30 times .

3) Answer (**B**)

Let the number 'n' belong to the set A.
Hence, the remainder when n is divided by 2 is 1
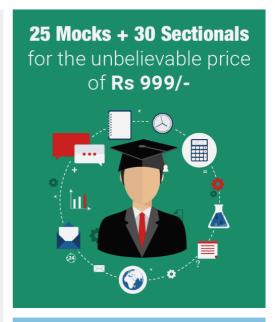The remainder when n is divided by 3 is 2
The remainder when n is divided by 4 is 3
The remainder when n is divided by 5 is 4 and
The remainder when n is divided by 6 is 5

So, when (n+1) is divisible by 2,3,4,5 and 6.
Hence, (n+1) is of the form 60k for some natural number k.
And n is of the form 60k-1

Between numbers 0 and 100, only 59 is of the form above and hence the correct answer is 1

4) Answer (B)

Let the number of sticks assigned to each boy be N.

Let the number of boxes be M.

So, number of sticks per box = N/M

Now, if he reduces the number of sticks in each box, the equation becomes N/(M+3) = N/M - 25

So, 25 = N/M - N/(M+3)

From the options, if N = 150, then, we get 25 = 150 [1/M - 1/(M+3)]

=> 1/6 = 1/M - 1/(M+3) => M = 3

So, the number of sticks assigned to each boy = 150
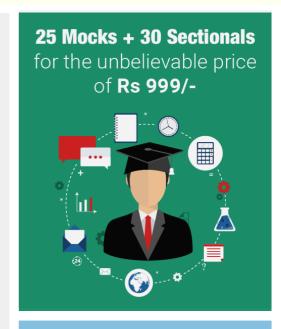
Remainder Theorem for CAT
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5) Answer (D)

Since after division of a number successively by 3, 4 and 7, the remainders obtained are 2, 1 and 4 respectively, the number is of form ((((4*4)+1)*3)+2)k = 53K

Let k = 1; the number becomes 53

If it is divided by 84, the remainder is 53.

Option d) is the correct answer.

Quadratic Equations
CAT Problems

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