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NUMBER OF FACTORS

Number of factors

- If we must find the number of factors of any number say N, then we should follow below steps:
  Step 1: Prime factorize N=$p^a \times q^b \times r^c$ ...
  Step 2: The number of factors of N= (a+1)(b+1)(c+1)…

Sum of factors

- To find the sum of all the factors of a number (say N), we follow below two steps:
  Step 1: Prime factorize N=$p^a \times q^b \times r^c$ ...
  Step 2: Sum of factors =((p^{a+1}–1)/p–1)((q^{b+1}–1)/q–1)((r^{c+1}–1)/r–1)…

NUMBER OF FACTORS

Product of Factors

- To find the product of all the factors of a number (say N), we follow below three steps:
  Step 1: Prime factorize N=$p^a {}_x q^b \times r^c$ ...
  Step 2: Let the number of factors of N be x. therefore, x= (a+1)(b+1)(c+1)…
  Step 3: Product of factors =N $\frac{x}{y}$

PROBLEM 1:

In each of the following numbers, what should be the missing digit in the indicated place such that the number is a multiple of 11?
945678_
A. 3
B. 2
C. 8
D. 5

ANS:**C.** 8

PROBLEM 2:

Find the number of factors of 300 excluding 1 and itself.

A. 18
B. 14
C. 16
D. 15

ANS:**A.** 18

PROBLEM 3:

Find the smallest number which should be multiplied with 520 to make it a perfect square.

A. 30
B. 130
C. 55
D. 35

ANS:**B.** 130

PROBLEM 4:

Find the greatest number which divides 83, 125 and 209 leaving the same remainder in each case.

A. 19
B. 17
C. 42
D. 23

ANS:**C.** 42

PROBLEM 5:

Two numbers have a H.C.F of 16 and a product of two numbers is 2560. Find the L.C.M of the two numbers?

A. 140
B. 150
C. 160
D. 170

ANS:**C.** 160

PROBLEM 6:

Find the greatest four digit number which leaves respective remainders of 2 and 5 when divided by 15 and 24.

A. 9974
B. 9125
C. 9565
D. 9997
E. None of these

ANS:**E.** None of these

PROBLEM 7:

A number consists of 3 digit whose sum is 10. The middle digit is equal to the sum of the other two and the number will be increased by 99 if its digits are reversed. The number is:

A. 145
B. 253
C. 370
D. 352

ANS:**B.** 253

PROBLEM 8:

A two-digit number is such that the product of the digits is 8. When 18 is added to the number, then the digits are reversed. The number is:

A. 18

B. 24

C. 42

D. 81

ANS:**B.** 24

PROBLEM 9:

The sum of the squares of three numbers is 138, while the sum of their products taken two at a time is 131. Their sum is:

A. 20

B. 30

C. 40

D. None of these

ANS:**A.** 20

PROBLEM 10:

Thrice the square of a natural number decreased by 4 times the number is equal to 50 more than the number. The number is:

A. 4

B. 5

C. 6

D. 10

ANS:**B.** 5

PROBLEM 11:

The sum of a number and its reciprocal is one-eighth of 34. What is the product of the number and its square root?

A. 8
B. 27
C. 32
D. None of these

ANS:**A.** 8

PROBLEM 12:

Two-third of a positive number and 25/216 of its reciprocal are equal. The number is:

A. 5/12

B. 12/5

C. 25/144

D. 144/25

ANS:**A.** 5/12

PROBLEM 13:

The difference between a positive proper fraction and its reciprocal is 9/20. The fraction is:

A. 3/5

B. 3/10

C. 4/5

D. 5/4

ANS:**C.** 4/5

PROBLEM 14:

On dividing 2272 as well as 875 by 3-digit number N, we get the same remainder. The sum of the digits of N is:

A. 10

B. 11

C. 12

D. 13

ANS:**A.** 10

PROBLEM 15:

On dividing number by 56, we get 29 as remainder. On dividing the same number by 8, what will be the remainder?

A. 4
B. 5
C. 6
D. 7

ANS:**B.** 5

PROBLEM 16:

The sum of two numbers is 684 and their HCF is 57. Find all possible pairs of such numbers.

A. (57,627)(285,399)
B. (37,575)(270,390)
C. (45,495)(30,330)
D. (45,575)(280,890)

ANS:**A.** (57,627)(285,399)

PROBLEM 17:

The difference of two numbers is 1365. On dividing the larger number by the smaller, we get 6 as quotient and 15 as remainder. What is the smaller number?

A. 240
B. 270
C. 295
D. 360

ANS:**B.** 270

PROBLEM 17:

In how many different ways can six players be arranged in a line such that two of them, Ajeet and Mukherjee are never together?

A. 120
B. 240
C. 360
D. 480

ANS:**D.** 480

PROBLEM 18:

The least number of four digits which is divisible by 15, 25, 40 and 75 is:

A. 9000

B. 9400

C. 9600

D. 9800

ANS:**C.** 9600

PROBLEM 19:

The product of two numbers is 4107. If the H.C.F of these numbers is 37, then the greater number is:

A. 101
B. 107
C. 111
D. 185

ANS:**C.** 111

PROBLEM 20:

Three numbers which are co-prime to each other are such that the product of the first two is 551 and that of the last two is 1073. The sum of the three numbers is :

A. 75

B. 81

C. 85

D. 89

ANS:**C.** 85