Answers

(1) 61, 67, 71, 73 and 79

Step 1

The numbers that are not divisible by any other number except 1 and itself are called prime numbers.

Step 2

Checking this condition for all the numbers lying between 60 and 80, we find that the prime numbers are 61, 67, 71, 73 and 79.

(2) 4896

Let us find the LCM of 36, 96, 6, 34, 18:

2 | 96, 36, 34, 18, 6

2 | 48, 18, 17, 9, 3

2 | 24, 9, 17, 9, 3

2 | 12, 9, 17, 9, 3

2 | 6, 9, 17, 9, 3

3 | 3, 9, 17, 9, 3

3 | 1, 3, 17, 3, 1

17 | 1, 1, 17, 1, 1

| 1, 1, 1, 1, 1

The LCM is = 2 × 2 × 2 × 2 × 2 × 3 × 3 × 17 = 4896

(3) 182

Step 1

The least number which is divisible by 12, 12, 9 and 10, is the Least Common Multiple (LCM) of 12, 12, 9 and 10.

Step 2

The LCM of 12, 12, 9 and 10 = 180.

Step 3

Now we need to find the number which leaves the remainder of 2 when divided by these numbers. This number should be 2 more than the LCM.
Therefore, the required number = LCM (12, 12, 9 and 10) + 2
= 180 + 2
= 182

(4) Deficient Number

Step 1

If we consider the number 10, its factors are: 1, 2, 5, 10. The sum of its factors is 1 + 2 + 5 + 10 = 18.

Step 2

We can see that the sum of all factors is less than twice the number itself, i.e. 2 × 10 = 20.

Step 3

Such numbers, whose sum of all factors, including 1 and the number itself is less than twice the number are called **deficient numbers.**

(5) 7560

Step 1

The least number of people in the community will be the LCM of the given numbers above.

Step 2

Let us find the LCM of 56, 378, 42, 45:

2 | 378, 56, 45, 42

2 | 189, 28, 45, 21

2 | 189, 14, 45, 21

3 | 189, 7, 45, 21

3 | 63, 7, 15, 7

3 | 21, 7, 5, 7

5 | 7, 7, 5, 7

7 | 7, 7, 1, 7

| 1, 1, 1, 1

The LCM is = 2 × 2 × 2 × 3 × 3 × 3 × 5 × 7 = 7560

Step 3

Thus, the least number of people in the community is 7560.

(6) 8524 8526 8528 8530 8532 8534 8536

Step 1

Even numbers are those numbers that are divisible by 2 and for a number to be divisible by 2, its unit digit should be a multiple of 2.

Step 2

Thus, the even numbers between 8523 and 8538 are 8524 8526 8528 8530 8532 8534 8536.

(7) **b.** 25

Step 1

A prime number is one that has only two factors: 1 and the number itself.

Step 2

Between 1 to 100, this condition stands true for the following numbers:
2, 3, 5, 7, 11, 13, 17, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 93, 97.

Step 3

So there are 25 prime numbers between 1 and 100.

(8) **d.** divisible by 2 and 3

Since, 6 is equal to 2 × 3, any number that is divisible by 6 will be divisible by 2 and 3 both and vice-versa.

(9) **d.** 70602

The last digit of an even number is a multiple of 2.

(10) **A)** 25 29 33 37

Step 1

If we observe the given pattern carefully, the difference between any two consecutive numbers is 4.

Step 2

This means that after 21 the next four numbers will be 25, 29, 33, and 37.

B) 21 17 13 9

Step 1

If we observe the given pattern carefully, the difference between any two consecutive numbers is 4.

Step 2

This means that after 25 the next four numbers will be 21, 17, 13, and 9.

(11) 80

Let us find the LCM of 40 and 16.

2 | 40, 16

2 | 20, 8

2 | 10, 4

2 | 5, 2

5 | 5, 1

| 1, 1

The LCM is = 2 × 2 × 2 × 2 × 5 = 80.

(12) 4977

The smallest multiple of any number is its product with 1. Therefore, the smallest multiple of 4977 will be equal to 4977 × 1 = **4977**.

(13) 2

Step 1

The numbers which are divisible by any number other than 1 or itself are called composite numbers.

Step 2

So, any number which has more than two factors is a composite number.

(14) 143

We know any number multiplied by 1 gives the number itself.
So, 143 × 1 = 143

(15) 9

Step 1

We know that the condition for any number to be divisible by 3 is that sum of its digit should be divisible by 3.

Step 2

If we assume the hundred thousands digit to be **a**, the sum of digits would be a + 5 + 1 + 0 + 7 + 8, or a + 21.

Step 3

From step 2, if we observe carefully, the largest value of **a**(except 0) for which a + 21 will be divisible by 3 will be 9.

Step 4

Hence, the largest digit at hundred thousands place that will make the number divisible by 3 is 9.