

**PARAGON CONVENT SCHOOL**

**SECTOR – 24B , CHANDIGARH**

**ANSWER KEY**

**CLASS – 6**

**SUB – MATHS**

**EXERCISE – 3F**

Q-1. The LCM of a pair of no is 4 and their sum is 6. What are the numbers ?

Sol : Given LCM is 4.

Factors of 4 = 1 , 2 , 4

Now the factors whose sum is 6 are 2 , 4

So , the two no are 2 and 4.

Q-2. The LCM of three different no is 4 . What are the no?

Sol : If LCM is 4 , then we know that 4 is a multiple of each of the three numbers. And so each number is equal to or less than 4. So 1,2,3,or 4.

Since 3 does not divide 4, that's out . so the answer is 1,2,and 4.

Q-3. The LCM of two no is 12 and their sum is 10. What are the no ?

Sol : Given LCM is 12

Factors of 12 = 1,2 , 3,4,6,12

Now the factors whose sum is 10 are 6 , 4

So , the two no are 6 and 4

Q-4. Find the smallest no that is divisible by 3 , 4 , 5 , 6,10 and 15

Sol : 2    3 , 4 , 5 , 6 , 10 , 15

|   |                        |
|---|------------------------|
| 2 | 3 , 2 , 5 , 3 , 5 , 15 |
| 3 | 3 , 1 , 5 , 3 , 5 , 15 |
| 5 | 1 , 1 , 5 , 1 , 5 , 5  |
|   | 1 , 1 , 1 , 1 , 1 , 1  |

LCM of 3, 4, 5, 6, 10, 15 =  $2 \times 2 \times 3 \times 5 = 60$

Q-6 Find the least no which when divided by 25, 45 and 60 leaves a remainder of 20.

Sol : The least no that is divisible by 25, 45 and 60 is the least common multiple of these three numbers.

|   |            |
|---|------------|
| 2 | 25, 45, 60 |
| 2 | 25, 45, 30 |
| 3 | 25, 45, 15 |
| 5 | 25, 15, 5  |
| 3 | 5, 3, 1    |
| 5 | 5, 1, 1    |
|   | 1, 1, 1    |

LCM of 25, 45 and 60 =  $2 \times 2 \times 3 \times 5 \times 3 \times 5 = 900$

Thus 900 is a no which is exactly divisible by 25, 45 and 60. We need a no that leaves a remainder of 20 in each case. This means that the required no is 20 more than 900.

So the least no divisible by 25, 45 and 60 leaving a remainder of 20 is  $900 + 20 = 920$ .

Q-7. Find the smallest no which when divided by 18, 12 and 24 leaves a remainder of 16, 10 and 22 respectively.

Sol :

|   |            |
|---|------------|
| 2 | 18, 12, 24 |
| 2 | 9, 6, 12   |
| 2 | 9, 3, 6    |
| 3 | 9, 3, 3    |
| 3 | 3, 1, 1    |
|   | 1, 1, 1    |

LCM of 18, 12 and 24 =  $2 \times 2 \times 2 \times 3 \times 3 = 72$

According to question :

$$18 - 16 = 2, 12 - 10 = 2, 24 - 22 = 2$$

Hence the number required is  $72 - 2 = 70$

Q-8 The school bell rings every 40 min and the clock tower of the city centre rings every 60 min . At 8 a.m. on a day both the bells sounded together . At what time will both of them make their sounds next ?

Sol : LCM of 40 and 60 =

|   |         |
|---|---------|
| 2 | 40 , 60 |
| 2 | 20 , 30 |
| 2 | 10 , 15 |
| 3 | 5 , 15  |
| 5 | 5 , 5   |
|   | 1 , 1   |

$$\text{LCM} = 2 \times 2 \times 2 \times 3 \times 5 = 120$$

That means the bells will ring together after 120 min that is 2 hours

That is 10 a.m.

Q-9. A toy train completes one round of a circular track in 120 sec. Another one completes a round in 180 sec. Both the trains start together from a station and run in opposite directions . After how many min will both the trains meet for the first time at the station from where they started?

Sol : 2 120 , 180

|   |         |
|---|---------|
| 2 | 60 , 90 |
| 3 | 30 , 45 |
| 5 | 10 , 15 |
| 2 | 2 , 3   |
| 3 | 1 , 3   |

$$1, 1 \quad \text{LCM of 120 and 180} = 2 \times 2 \times 3 \times 5 \times 2 \times 3 =$$

360 So , the trains will meet after 360 seconds.

Q-12. Find a number between 800 and 900 which is divisible by 22 , 33 and

66. Sol : LCM of 22 , 33 and 66

|    |              |                                   |
|----|--------------|-----------------------------------|
| 2  | 22 , 33 , 66 |                                   |
| 3  | 11 , 33 , 33 |                                   |
| 11 | 11 , 11 , 11 |                                   |
|    | 1 , 1 , 1    | LCM = $2 \times 3 \times 11 = 66$ |

The LCM of 22 , 33 and 66 is 66 so a no which is divisible by 66 is also divisible by 22 and 33

Now on dividing 900 by 66 we get 42 as remainder so  $900 - 42 = 858$  is divisible by 66 and hence by 22 and 33.