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 = 2x2x3x5 = 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 = 2x2x3x5x3x5= 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 = 2x2x2x3x3 = 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

LCM = 2x2x2x3x5 = 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 LCM of 120 and 180 = 2x2x3x5x2x3 = 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 = 2x3x11 = 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.

EXERCISE – 3G

Remember =

1. The product of two numbers = HCF of the no x LCM of the no
2. One number = $\frac{\text{HCF X LCM}}{\text{Other number}}$

Q-2. Find the pairs of numbers which are co-prime and then find their HCF and LCM.

(a) 11 , 19

11 = 1x 11

19 = 1x 19

Common factor = 1 , hence 11 and 19 are co-prime

HCF = 1

LCM = 11 X19 = 209

(d) 93 , 32

93 = 3 x31x1

32 = 2x2x2x2x2x1

Common factor = 1 , hence 93 and 32 are co – prime

HCF = 1

LCM = 2x2x2x2x2x3x31= 2976

Q-3 The HCF of two no is 12 and their product is 4320. What is their LCM? If one of the no is 60, what is the other no ?

Sol : HCF = 12

Product of the no = 4320

First no = 60

Other no =?

Product of the no = HCF x LCM

4320 = 12 x LCM

LCM = 4320 ÷ 12 = 360

Other no = $\frac{\text{HCF X LCM}}{\text{First no}} = \frac{12 \times 360}{60} = 72$

Q-4. The HCF and LCM of two no is 15 and 450 respectively . if one no is 75, what is the other no ?

Sol : HCF = 15

LCM = 450

First no = 75

Other no = $\frac{\text{HCF X LCM}}{\text{First no}} = \frac{15 \times 450}{75} = 90$

Q-6. The LCM of two no is 819. If the two no are 63 and 117, find the HCF.

Sol : LCM = 819

First no = 63

Other no = 117

HCF = ?

Product of two no = HCF X LCM

63 x 117 = HCF X 819

HCF = $\frac{63 \times 117}{819} = \frac{7371}{819} = 9$

Q-7. The product of HCF and LCM of two no is 119. Find the two no if none of them is 1.

Sol :

7	119
17	17
	1

Factors of 119 = 7x17x1

It is given one no is not 1, which means the required no are 7 and 17.