8. 93-3 = 90, 111-3 = 108, 129-3 = 126
So, the HCF of 90, 108 and 126 is :-

HCF of 90 and 108 :- 90) 108 (1
− 90
18) 90 (5
− 90
0

HCF of 18 and 126 :- 18) 126 (7
− 126
0

So, the greatest number which when divided by 93, 111 and 129, leaving a remainder of 3 is 18

cw 24/6/21

Exercise 8(c)

8, 12 and 24

Multiples of 8 = 8, 16, (24), 32, 40, 48, 56, 64, 72, 80
Multiples of 12 = 12, (24), 36, 48, 60, 72, 84, 96, 108, 120
Multiples of 24 = (24) 48, 72, 96, 120, 144, 168, 192, 216, 240
So, the LCM of 8, 12 and 24 is 24.

HW 24/6/21

ii) 10, 15 and 20.

10 = 10, 20, 30, 40, 50, (60), 70, 80, 90, 100, ...
15 = 15, 30, 45, (60), 75, 90, 105, 120, 135, 150 .....
20 = 20, 40, (60) 80, 100, 120, 140, 160, 180, 200 .....

Ans – LCM = 60.

iii) 3, 6, 9 and 12.

Solution:

3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, (36)
6 = 6, 12, 18, 24, 30, (36) 42, 48, 54, 60
12 = 12, 24, (36), 48, 60, 72, 84, 96, 108, 120
9 = 9, 18, 27, (36) 45, 54, 63, 72, 81, 90.

Ans- LCM = 36. ✓

CW 25 | 8 | 21

Exercise 8 (B)

2. i) 18, 24 and 96.

Solution:

2	18, 24, 96
2	9, 12, 48
2	9, 6, 24
3	9, 3, 12
	3, 1, 4

LCM = 2 × 2 × 2 × 3 × 3 × 4 = 288 ✓

ii) ~~100, 150 and 200.~~ 34, 85 and 51.

Solution: ✓

17 | 34, 85, 51
2, 5, 3

17 x 2 x 5 x 3 = 510 ✓

iii) 14, 21 and 98.

Solution:

7 | 14, 21, 98
2 | 2, 3, 14
1, 3, 7

LCM = 7 x 2 x 3 x 7 = 294 ✓

ii) 100, 150 and 200.

Solution:

2 | 100, 150, 200
5 | 50, 75, 100
5 | 10, 15, 20
2 | 2, 3, 4
1, 3, 2 ✓

LCM = 2 x 5 x 5 x 2 x 3 x 2 = 600

iv) 22, 121, and 33

Solution:

11 | 22, 121, 33
2, 11, 3

LCM = 11 × 2 × 11 × 3 = 726.

2 | 12, 18
3 | 6, 9
2, 3

HCF = 2 × 3 = 6

LCM = 2 × 3 × 2 × 3 = 36

HCF × LCM = 6 × 36 = 216

12 × 18 = 216

So, we can observe that, HCF × LCM = Product of the two given numbers. ✓

Exercise 8(C)

3. Solution:

HCF = 50, LCM = 300

1st number = 150 2nd Number = ?

As Product of two numbers = HCF × LCM

150 X 2nd no = 50 X 300 = 15000

2nd no = 15000 ÷ 150 = 100.

6. Solution:

The smallest number which when divided by 12, 15, 18 and 24 and 36, leaves no remainders is the LCM

3	12, 15, 18, 24, 36
2	4, 5, 6, 8, 12
2	2, 5, 3, 4, 6
3	1, 5, 3, 2, 3
	1, 5, 1, 2, 1

LCM = 3 X 2 X 2 X 3 X 5 X 2 = 360

∴ 360 is the number which when divided by 12, 15, 18, 24 and 36 leaves no remainders.

25 | 6 | 21

4. Product of two numbers = 432

LCM = 72

As, Product of two numbers = HCF X LCM

So, HCF = Product ÷ LCM

= 432 ÷ 72 = Q = 6, R = 0

```
    6
72 | 432
   -432
   ----
     0
```

Ans: So, the HCF is 6.

5. The product of two numbers = 19,200.
HCF = 40
Product of two numbers = HCF × LCM
So, LCM = Product ÷ HCF
= 19,200 ÷ 40 = Q = 480, R = 0

```
      480
40 | 19200
   - 160
   ------
     3200
   - 320
   ------
       00
     - 00
     ----
       0
```

Ans- ∴ LCM is 480

7. The smallest number, which when ~~divided~~ increased by 1 is exactly divisible by 12, 18, 24, 32 and 40 is LCM − 1.
So, LCM of 12, 18, 24 32 and 40

```
= 2 | 12, 18, 24, 32, 40
  2 | 6, 9, 12, 16, 20
  3 | 3, 9, 6, 8, 10
  2 | 1, 3, 2, 8, 10
      1, 3, 1, 4, 5
```

LCM = 2 × 2 × 3 × 2 × 3 × 4 × 5 = 1440

The required number = ₹1440 − 1 = 1439

8. The smallest number which, on being decreased by 3, is completely divisible by 18, 36, 32 and 27 is LCM + 3.
LCM of 18, 36, 32 and 27 =

2	18, 36, 32, 27
3	9, 12, 16, 27
2	3, 4, 16, 9
2	3, 2, 8, 9
3	3, 1, 4, 9
	1, 1, 4, 3

LCM = 2 × 3 × 2 × 2 × 3 × 4 × 3 = 864

Required number = 864 + 3 = 867

∴ the required number is 867.

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28.06.2021