Revision exercise [chapter 8]

1. Find the HCF of i) 108, 288 and 420

Ans-

```
108 | 288 | 2
   -216
    72 | 108 | 1
       -72
        36 | 72 | 2
           -72
            0
```

```
36 | 420 | 11
   - 396
    24 | 36 | 1
       -24
        12 | 24 | 2
           -24
            0
```

HCF = 12

ii) 36, 54 and 138

ans-

```
36 | 54 | 1
  - 36
   18 | 36 | 2
      - 36
        0
```

```
18 | 138 | 7
  - 126
   12 | 18 | 1
      - 12
       6 | 12 | 2
         -12
          0
```

HCF = 6

2. Find the Lcm of i) 72, 80, 252

Ans-

```
2 | 72  80  252
2 | 36  40  126
2 | 18  20  63
3 | 9   10  63
3 | 3   10  21
2 | 1   10  7
    1   5   7
```

Lcm = 2×2×2×2×3×3×5×7 = 5040

ii) 48, 66 and 120

ans-

2	48	66	120
3	24	33	60
2	8	11	20
2	4	11	10
	2	11	5

LCM = $2 \times 2 \times 2 \times 2 \times 3 \times 5 \times 11 = 2640$

3. State true or false [Give an example in support of your answer in each case] :

a) HCF of two prime numbers is 1

ans- true, example :

$11 = 1 \times 11$

$13 = 1 \times 13$

HCF = 1

b) HCF of two co-prime numbers is 1

Ans- True ; example :

$45 = 3 \times 3 \times 5 \times 1$

$56 = 2 \times 2 \times 2 \times 7 \times 1$

HCF = 1

c) L.C.M of two prime numbers is equal to their product.

Ans- True ; example :

5 = 5, 10, 15, 20, 25, 30, (35), 40, 45, 50

7 = 7, 14, 21, 28, (35), 42, 49, 56, 63, 70

$= 5 \times 7 = 35$

L.C.M. = 35

d) L.C.M of two co-prime numbers is equal to their product

ans- True; example :

8 = 2 x 2 x 2 x

15 = 3 x 5 x

Lcm = 2 x 2 x 2 x 3 x 5 = 120

8 x 15 = 120

4. ans- Product of ~~lcm and hcf~~ two numbers = 12096

~~one of the number~~ = HCF = 36

Lcm = 12096 ÷ 36

= 336

5. ans Product of hcf and lcm = 1152

one of the number = 48

other number = 1152 ÷ 48

= 24

6. ans- ~~Find~~ (i) the smallest number that is completely divisible by 28 and 42 = Lcm of 28 and 42 =

2	28	42
2	14	21
7	7	21
	1	3

Lcm = 2 x 2 x 3 x 7 = 84

(ii) ans- the largest number that can divide 28 and 42 completel

= HCF of 28 and 42

= 28 | 42 | 1

-28

14 | 28 | 2

-28

0

HCF = 14

7. ans -

2	140	168
2	70	84
2	35	42
7	35	21
	5	3

Lcm = $2 \times 2 \times 2 \times 3 \times 5 \times 7 = 840$

HCF = $140 \times 168 \div 840$

$= 23520 \div 840 = 28$

8. Find the HCF of 108 and 450 and use the HCF obtained to find the lcm of the given numbers.

Ans - 108 | 450 | 4

-432

18 | 108 | 6

-108

0

HCF = 18

Lcm = $108 \times 450 \div 18$

$= 48600 \div 18 = 27,00$