2) 72, 80, 252

$72 = 2 \times 2 \times 2 \times 3 \times 3 = 2^3 \times 3^2$

$80 = 2 \times 2 \times 2 \times 2 \times 5 = 2^4 \times 5^1$

$252 = 2 \times 2 \times 3 \times 3 \times 7 = 2^2 \times 3^2 \times 7^1$

~~$2 \times 2 \times 2 \times 3$~~

$LCM = 2^4 \times 3^2 \times 5^1 \times 7^1 =$

$2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 7 = 5040$ ✓

2	72
2	36
2	18
3	9
	3

2	80
2	40
2	20
2	10
	5

2	252
2	126
3	63
3	21
	7

~~Exercise 8 (C)~~ Revision Exercise (8)

2 ii) $48 = 2 \times 2 \times 2 \times 2 \times 3$ or $2^4 \times 3^1$

$66 = 2 \times 3 \times 11$ or $2^1 \times 3^1 \times 11^1$

$120 = 2 \times 2 \times 2 \times 3 \times 5$ or $2^3 \times 3^1 \times 5^1$ 11

$LCM = 2^4 \times 3^1 \times 5^1 \times 11^1$

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

Ans LCM = 2640 ✓

2	66
3	33
	11

2	48
2	24
2	12
2	6
	3

2	120
2	60
2	30
3	15
	5

6. i) The smallest number that is completely divisible by 28 and 42 is the LCM.

2 | 28, 42
7 | 14, 21
2, 3

LCM = 2×7×2×3 = 84

So, the smallest number that is completely divisible by 28 and 42 is 84.

ii) The largest number that can divide 28 and 42 is the HCF.

2 | 28, 42
7 | 14, 21
2, 3

HCF = 2×7 = 14

So, the largest number that divides 28 and 42 is 14.

8. 2 | 108, 450
3 | 54, 225
3 | 18, 75
6, 25

HCF = 2×3×3 = 18.

Product of the no.s = HCF × LCM

$\frac{108 \times 450}{18} = 108 \times 25 = 18 \times 25 = 2700$

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Revision Exercise

1. i) HCF of 108, 288 and 420 =

2	108, 288, 420
2	54, 144, 210
3	27, 72, 105
	9, 24, 35

∴ HCF = 2 × 2 × 3 = 12.

ii) HCF of 36, 54 and 420

36 = 2 × 2 × 3 × 3

54 = 2 × 3 × 3 × 3

420 = 2 × 2 × 3 × 5 × 7

HCF = 2 × 3 = 6

∴ HCF is 6.

2	54
3	27
3	9
	3

2	36
2	18
3	9
	3

2	420
2	210
3	105
5	35
	7

✓

3. i) HCF of two prime numbers is 1.

Ans- ~~False~~ True. Example- 5 and 7 are prime numbers and their HCF is 1.

ii) HCF of two coprime numbers is 1.

Ans- True. Example: 8 and 9 are co-primes and their HCF is also 1.

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

✓

Ans- True. Example: 5 and 7 are prime numbers and their LCM is equal to their product, ie. 5X7=LCM=35.

iv) L.C.M of two co-prime numbers is ~~12096~~ equal to their product

Ans- True. Example: 11 and 16 are coprimes and their LCM is equal to their product, i.e. 11X16=LCM=176.

4. Product of two numbers = 12096.

HCF = 36

Product of two numbers = HCF X LCM

LCM = Product of the numbers ÷ HCF

= 12096 ÷ 36 = 336

∴ The LCM is 336.

5. Product of HCF and LCM of two numbers = 1152.

One of the numbers = 48

Product of two numbers = HCF X LCM.

Second number = Product of HCF and LCM ÷ ~~First number~~ Given

1152 ÷ 48 = 24

So, second number is 24.

7.B. LCM of 140 and 168 =

2	140, 168
2	70, 84
7	35, 42
	5, 6

LCM = 2 × 2 × 7 × 5 × 6 = 840

Product of two numbers = HCF × LCM
So, HCF = Product of 140 and 168 ÷ LCM / 840.

$$\frac{140 \times 168}{840} = \frac{23520}{840} = 28$$

168
× 140
000
6720
16800
23520

Ans- So, the LCM is 840 and HCF is 28

✓

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