28.6.21

LCM Revision Exercise

Prime factor method

28) 72, 80, 252

$72 = 2\times2\times2\times3\times3 = 2^3\times3^2$

$80 = 2\times2\times2\times2\times5 = 2^4\times5$

$252 = 2\times2\times3\times3\times7 = 2^2\times3^2\times7$

$LCM = 2^4\times3^2\times5\times7$

$= 2\times2\times2\times2\times3\times3\times5\times7 = 5040$

28) (i) 48, 66, 120

$48 = 2\times2\times2\times2\times3 = 2^4\times3$

$66 = 2\times3\times11 = 2\times3\times11$

$120 = 2\times2\times2\times3\times5 = 2^3\times3\times5$

$LCM = 2^4\times3\times5\times11$

$= 2\times2\times2\times2\times3\times5\times11 = 2640$

6) (i)

$2 \mid 28, 42$

$7 \mid 14, 21$

$2, 3$

$LCM = 2\times7\times2\times3 = 84$

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

(ii)

$28 \overline{)42} \; (1$

28

$14 \overline{)28} \; (2$

28

0

HCF = 14

So, the largest number that can divide 28 and 42 completely is 14.

8) HCF = 2×3×3 = 18

Product of the two no.
= HCF × LCM

$108 \times 450 = 18 \times LCM$

$LCM = \frac{108 \times 450}{18} = \frac{4960}{189}$

$LCM = \frac{108 \times 450}{18} = 48600 \div 18 = 2700$

So, the HCF is 18 and the LCM is 2700.

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

1) (i) 108, 288, 420

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

HCF = 2×2×3 = 12

(ii) 36, 54, 138

2 | 36, 54, 138
3 | 18, 27, 69
6, 9, 23

HCF = 2×3 = 6

3) (i) True. (2 and 5 are two prime numbers and their HCF is 1)

(ii) True. (8 and 9 are two co-prime numbers and their HCF is 1)

(iii) True. (5 and 7 are two prime numbers and their LCM is 35)

(iv) True (4 and 5 are two co-prime numbers and their LCM is 20.

Q4) Product of two numbers = 12096
HCF = 36
LCM = ?
Product of the two numbers = HCF × LCM
12096 = 36 × LCM
LCM = 12096 ÷ 36 = 336
So, the LCM is 336.

Q5) ~~Produ~~ HCF × LCM = 1152
~~One~~ One no. = 48
Other no. = ?
Product of the two numbers = HCF × LCM
48 × Other no. = 1152
Other no. = 1152 ÷ 48 = 24
So, the other number is 24.

Q7)
2 | 140, 168
2 | 70, 84
7 | 35, 42
5, 6

LCM = 2 × 2 × 7 × 5 × 6 = ₹840
LCM = ₹840
Product of the two no. = 140 × 168 = 23520
HCF = ?
Product of the two no. = HCF × LCM
₹23520 = ₹840 × HCF
HCF = 23520 ÷ ₹840 = 28
So, the LCM is 840 and the HCF is 28.