Ch 8

Ex-8(C)

1) i) 18, 12 and 24

A= 18 = 18, 36, 54, (72), 90, 108
12 = 12, 24, 36, 48, 60, (72), 96, 108
24 = 24, 48, (72)
LCM of 18, 12 and 24 = 72

ii) 10, 15, 20

A⇒ 10 - 10, 20, 30, 40, 50, (60)
15 - 15, 30, 45, (60)
20 - 20, 40, (60)
LCM of 10, 15 and 20 = 60

iii) 3, 6, 9 and 12

A = 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, (36)
6 = 6, 12, 18, (24), 30, (36)
12 = 12, (24), (36)
9 = 9, 18, 27, (36)
LCM of 3, 6, 9 and 12 = 36

2) ii) 100, 150 and 200

2	100, 150, 200	2	100, 150, 200
2	50, 75, 100	2	50, 75, 100
5	25, 75, 50	5	25, 75, 50
5	5, 15, 10	5	5, 15, 10
	1, 13, 2		1, 3, 2

LCM = 2×2×5×5×3×2 = 600

$100 = 2\times2\times5\times5 = 2^2\times5^2$
$150 = 2\times2\times5\times5\times3 = 2^2\times5^2\times3$
$200 = 2\times2\times5\times5\times2 = 2^3\times5^2$
∴ LCM $= 2^3\times5^2\times3$
$= 2\times2\times2\times5\times5\times3 = 600$

iii) 14, 21 and 98

A	7 | 14, 21, 98	$14 = 7 \times 2 = 7 \times 2$
	2 | 2, 3, 14	$21 = 7 \times 2 \times 3 = 7 \times 2 \times 3$
	1, 3, 7	$98 = 7 \times 2 \times 3 \times 7 = 7^2 \times 2 \times 3$
	LCM $= 7 \times 2 \times 3 \times 7 = 294$	LCM $= 7^2 \times 2 \times 3$
		$= 7 \times 7 \times 2 \times 3 = 294$

iv) 22, 121 and 33

	11 | 22, 121, 33	$22 = 11 \times 2 = 11 \times 2$
	2, 11, 3	$121 = 11 \times 11 = 11^2$
	LCM $= 11 \times 2 \times 11 \times 3 = 726$	$33 = 11 \times 3 = 11 \times 3$
		LCM $= 11^2 \times 2 \times 3$
		$= 1 \times 11 \times 2 \times 3 = 726$

3) → HCF and LCM of two number = 50 and 300

One number = 150

~~Other number~~ ~~The product of HCF and LCM = 50 × 300~~ ~~product of two numbers~~

Product of HCF and LCM of two number = Product of two numbers

The other number = Product of HCF and LCM divided by one number

∴ The other number is $= 50 \times 300 \div 150$

~~equivalent~~ $= 100$ $= 15000 \div 150$

$= 100$

4) Product of two number = 432

LCM = 72

~~Find~~ the HCF = Product of two number divided by LCM

$= 432 \div 72 = 6$

∴ HCF = 6

5) The product of two number = 19,200

HCF = 40

LCM = The product of two number divided by HCF

= 19,200 ÷ 40

= 480

∴ LCM = 480

1) i)

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

LCM = 2×2×2×2×2×3×3 = 288

$18 = 2 \times 9 = 2 \times 3 \times 3 = 2 \times 3^2$

$24 = 2 \times 12 = 2 \times 2 \times 3 \times 2 = 2^3 \times 3$

$96 = 2 \times 48 = 2 \times 2 \times 2 \times 2 \times 2 \times 3 = 2^5 \times 3$

$= 2 \times 9 \times 12 \times 48$

$LCM = 2^5 \times 3^2 = 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 = 288$

ii) b)

2	12, 15, 18, 24, 36
2	6, 15, 9, 12, 18
3	3, 15, 9, 6, 9
3	1, 5, 3, 2, 3
	1, 5, 1, 2, 1

LCM = 2×2×3×3×5×2

= 360

93, 111, 129 leaving remainder 3 in each case

Required: 93−3, 111−3, 129−3

90, 108, 126

Read greatest

7) 2 | 12, 18, 24, 32, 40
2 | 6, 9, 12, 16, 20
3 | 3, 9, 6, 8, 10
2 | 1, 3, 2, 8, 10
2 | 1, 3, 1, 4, 5
1, 3, 1, 2, 5

LCM = 2×2×3×2×2×3×2×5 = 1440

Req. no. = 1440 − 1
= 1439

8) 2 | 18, 36, 32, 27
3 | 9, 18, 16, 27
2 | 3, 6, 16, 9
3 | 3, 3, 8, 9
2 | 1, 1, 8, 3
2 | 1, 1, 4, 3
1, 1, 2, 3

LCM = 864

Required no. = 864 + 3
= 867

2) 34 = 2×17
85 = 5×17
51 = 3×17
HCF = 2×3×5×17 = 510

17 | 34, 85, 51
2, 5, 3
= 17×2×5×3 = 510