Exercise 8C

1. Using the common multiple method, find the L.C.M of the following:

a) 8, 12 and 24

Ans- 8 = 8, 16, 24, 32, 40, 48, 56, 64, 72, 80
12 = 12, 24, 36, 48, 60, 72, 84, 96, 108, 120
24 = 24, 48, 72, 96, 120, 144, 16, 192
Common multiples = 24, 48 and 72
L.C.M = 24

b) 10, 15 and 20

Ans- 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
Common multiples = 60
L.C.M = 60

c) 3, 6, 9, 12

3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, (36), 39
6 = 6, 12, 18, 24, 30, (36), 42, 48, 54, 60, 66
9 = 9, 18, 27, (36), 45, 54, 63, 72, 81, 90, 99
12 = 12, 24, (36), 48, 60, 72, 84, 96, 108, 120
lowest common multiples = 36

2. Find the L.C.M. of each of the following groups of number
i) Prime factor method
ii) divison method

a) 18, 24 and 96

i) ans- $18 = 2 \times 3 \times 3$
$24 = 2 \times 2 \times 2 \times 3$
$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$
$L.C.M = 2 \times 3 = 6$

$18 = 2 \times 3 \times 3$
$24 = 2 \times 2 \times 2 \times 3$
$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$
$lcm = 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3$
$= 288$

ii) ans-

2	18 24 96
2	9 12 48
3	9 6 24
2	3 2 8
2	3 1 4
	3 1 2

Ans- $= 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 = 288$

b) 100, 150 and 200

i) Ans- $100 = 2 \times 2 \times 5 \times 5$
$150 = 2 \times 3 \times 5 \times 5$
$200 = 2 \times 2 \times 2 \times 5 \times 5$
$L.C.M = 2 \times 2 \times 2 \times 3 \times 5 \times 5 = 600$

ii ans-

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

$= Lcm = 2 \times 2 \times 2 \times 3 \times 5 \times 5 = 600$