Exercise 2.9

Question: 1

Determine the L.C.M of the numbers given below:

Solution:

(i) 48, 60

Prime factorization of 48 = 2 × 2 × 2 × 2 × 3

Prime factorization of 60 = 2 × 2 × 3 × 5

Therefore, Required LCM = 2 × 2 × 2 × 2 × 3 × 5 = 240

(ii) 42, 63

Prime factorization of 42 = 2 × 3 × 7

Prime factorization of 63 = 3 × 3 × 7

Therefore, Required LCM = 2 × 3 × 3 × 7 = 126

(iii) 18, 17

Prime factorization of 18 = 2 × 3 × 3

Prime factorization of 17 = 17

Therefore, Required LCM = 2 × 3 × 3 × 17 = 306

(iv) 15, 30, 90

Prime factorization of 15 = 3 × 5

Prime factorization of 30 = 2 × 3 × 5

Prime factorization of 90 = 2 × 3 × 3 × 5

Therefore, Required LCM = 2 × 3 × 3 × 5 = 90

(v) 56, 65, 85

Prime factorization of 56 = 2 × 2 × 2 × 7

Prime factorization of 65 = 5 × 13

Prime factorization of 85 = 5 × 17

Therefore, Required LCM = 2 × 2 × 2 × 5 × 7 × 13 × 17 = 61,880

(vi) 180, 384, 144

Prime factorization of 180 = 2 × 2 × 3 × 3 × 5

Prime factorization of 384 = 2 × 2 × 2 × 2 × 2 × 2 × 2 × 3

Prime factorization of 144 = 2 × 2 × 2 × 2 × 3 × 3

Therefore,

Therefore, Required LCM = 2 × 2 × 2 × 2 × 2 × 2 × 2 × 3 × 3 × 5 = 5,760

(vii) 108, 135, 162

Prime factorization of 108 = 2 × 2 × 3 × 3 × 3

Prime factorization of 135 = 3 × 3 × 3 × 5

Prime factorization of 162 = 2 × 3 × 3 × 3 × 3

Therefore, Required LCM = 2 × 2 × 3 × 3 × 3 × 3 × 5 = 1,620

(viii) 28, 36, 45, 60

Prime factorization of 28 = 2 × 2 × 7

Prime factorization of 36 = 2 × 2 × 3 × 3

Prime factorization of 45 = 3 × 3 × 5

Prime factorization of 60 = 2 × 2 × 3 × 5

Therefore, Required LCM =2 × 2 × 3 × 3 × 5 × 7= 1,260