

Checkpoint 50



1. Check and tick (✓) the common multiple.

- (a) Common multiple of 6 and 16 is 32/36/48.
(b) Common multiple of 12 and 18 is 24/36/54.
(c) Common multiple of 9 and 11 is $(11 + 9)/(11 - 2)/(11 \times 9)$.

2. Find the LCM by prime factorisation.

- (a) 24, 48 (b) 48, 96 (c) 12, 16, 18 (d) 93, 42, 6 (e) 24, 25, 40, 50

3. Find the LCM by division method.

- (a) 88, 22 (b) 15, 180 (c) 91, 39, 516 (d) 315, 252 (e) 3, 17, 18, 51

4. LCM of two numbers 1550 and 620 is 3100. Find their HCF using the relationship between HCF and LCM.

5. What is the smallest number that is exactly divisible by 17, 28, 102, and 112?

6. Find the smallest number that leaves the remainder 3 when divided by any of the numbers 6, 7, and 8.

[Hint: Find the LCM of 6, 7, and 8 then add 3 in it.]

HCF and LCM Stories - Application

Ex: 5 (D)

Q.2 Find the LCM

(a) 24, 48

$$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 3 \\ = 48$$

2	24	48
2	12	24
2	6	12
2	3	6
3	3	3
	1	1

(b) 48, 96

$$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 2 \times 3 \\ = 96$$

2	48	96
2	24	48
2	12	24
2	6	12
2	3	6
3	3	3
	1	1

(c) 12, 16, 18

$$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \\ = 144$$

2	12	16	18
2	6	8	9
2	3	4	9
2	3	2	9
3	3	1	9
3	1	1	3
	1	1	1

(d) 93, 42, 6

2	93	42	6
3	31	14	2
7	31	2	1
31	1	1	1

$$\text{LCM} = 2 \times 3 \times 7 \times 31 \\ = 1302$$

(e) 24, 25, 40, 50

2	24	25	40	50
2	12	25	20	25
2	6	25	10	25
3	3	25	5	25
5	1	5	1	5
5	1	1	1	1

$$\text{LCM} = 2 \times 2 \times 2 \times 3 \times 5 \times 5 \\ = 600$$

5CD)

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Q.3 Find the LCM

(a) 88, 22

2	88	22
2	44	11
2	22	11
11	11	11
	1	1

$$\begin{aligned} \text{LCM} &= 2 \times 2 \times 2 \times 11 \\ &= 88 \end{aligned}$$

(b) 15, 180

2	15	180
2	15	90
3	15	45
3	5	15
5	5	5
	1	1

$$\begin{aligned} \text{LCM} &= 2 \times 2 \times 3 \times 3 \times 5 \\ &= 180 \end{aligned}$$

(c) 91, 39, 516

2	91	39	516
2	91	39	258
3	91	39	129
7	91	13	43
13	13	13	43
43	1	1	43
	1	1	1

$$\begin{aligned} \text{LCM} &= 2 \times 2 \times 3 \times 7 \times 13 \times 43 \\ &= 46956 \end{aligned}$$

(d) 315, 252

2	315	252
2	315	126
3	315	63
3	105	21
5	35	7
7	7	7
	1	1

$$\text{LCM} = 2 \times 2 \times 3 \times 3 \times 5 \times 7 \\ = 1260$$

(e) 3, 17, 18, 51

2	3	17	18	51
3	3	17	9	51
3	1	17	3	17
17	1	17	1	17
	1	1	1	1

$$\text{LCM} = 2 \times 3 \times 3 \times 17$$

$$= 306$$

Q.4 1st number = 1550
2nd number = 620.

$$\text{LCM} = 3100$$

$$\text{HCF} = 9$$

Since, $\text{HCF} \times \text{LCM} = \text{Product of numbers}$

$$\text{i.e., } 1550 \times 620 = 3100 \times \text{LCM}$$

$$\therefore \text{LCM} = \frac{1550 \times 620}{3100}$$

$$= 310$$

Q.5

LCM of 17, 28, 102 and 112

2	17	28	102	112
2	17	14	51	56
2	17	7	51	28
2	17	7	51	14
3	17	7	51	7
7	17	7	17	7
17	17	1	17	1
	1	1	1	1

$$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 3 \times 7 \times 17$$

$$= 5712$$

Q.6

2	6	7	8
2	3	7	4
2	3	7	2
3	3	7	1
7	1	7	1
	1	1	1

$$\text{LCM} = 2 \times 2 \times 2 \times 3 \times 7$$

$$= 168$$

$$\therefore 168 + 3 = 171$$