



DSSSB + SSC MTS

DSSSB PRT, TGT & PGT



दफ्तरी बैच

Part(A+B)

SCHOLAR BATCH

MATHS

LCM & HCF

Part -2



LIVE 02-04-2024 08:00 AM

LCM $\rightarrow$ Least Common Multiple $\rightarrow$ Unlimited

सबसे छोटा

4 $\rightarrow$ 4, 8, 12, 16, 20, 24, 28

9 $\rightarrow$ 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99, 108, 117, 126, 135, 144, 153, 162, 171, 180, 189, 198, 207, 216, 225, 234, 243, 252, 261, 270, 279, 288, 297, 306, 315, 324, 333, 342, 351, 360, 369, 378, 387, 396, 405, 414, 423, 432, 441, 450, 459, 468, 477, 486, 495, 504, 513, 522, 531, 540, 549, 558, 567, 576, 585, 594, 603, 612, 621, 630, 639, 648, 657, 666, 675, 684, 693, 702, 711, 720, 729, 738, 747, 756, 765, 774, 783, 792, 801, 810, 819, 828, 837, 846, 855, 864, 873, 882, 891, 900, 909, 918, 927, 936, 945, 954, 963, 972, 981, 990, 999, 1008, 1017, 1026, 1035, 1044, 1053, 1062, 1071, 1080, 1089, 1098, 1107, 1116, 1125, 1134, 1143, 1152, 1161, 1170, 1179, 1188, 1197, 1206, 1215, 1224, 1233, 1242, 1251, 1260, 1269, 1278, 1287, 1296, 1305, 1314, 1323, 1332, 1341, 1350, 1359, 1368, 1377, 1386, 1395, 1404, 1413, 1422, 1431, 1440, 1449, 1458, 1467, 1476, 1485, 1494, 1503, 1512, 1521, 1530, 1539, 1548, 1557, 1566, 1575, 1584, 1593, 1602, 1611, 1620, 1629, 1638, 1647, 1656, 1665, 1674, 1683, 1692, 1701, 1710, 1719, 1728, 1737, 1746, 1755, 1764, 1773, 1782, 1791, 1800, 1809, 1818, 1827, 1836, 1845, 1854, 1863, 1872, 1881, 1890, 1899, 1908, 1917, 1926, 1935, 1944, 1953, 1962, 1971, 1980, 1989, 1998, 2007, 2016, 2025, 2034, 2043, 2052, 2061, 2070, 2079, 2088, 2097, 2106, 2115, 2124, 2133, 2142, 2151, 2160, 2169, 2178, 2187, 2196, 2205, 2214, 2223, 2232, 2241, 2250, 2259, 2268, 2277, 2286, 2295, 2304, 2313, 2322, 2331, 2340, 2349, 2358, 2367, 2376, 2385, 2394, 2403, 2412, 2421, 2430, 2439, 2448, 2457, 2466, 2475, 2484, 2493, 2502, 2511, 2520, 2529, 2538, 2547, 2556, 2565, 2574, 2583, 2592, 2601, 2610, 2619, 2628, 2637, 2646, 2655, 2664, 2673, 2682, 2691, 2700, 2709, 2718, 2727, 2736, 2745, 2754, 2763, 2772, 2781, 2790, 2800, 2809, 2818, 2827, 2836, 2845, 2854, 2863, 2872, 2881, 2890, 2900, 2909, 2918, 2927, 2936, 2945, 2954, 2963, 2972, 2981, 2990, 3000, 3009, 3018, 3027, 3036, 3045, 3054, 3063, 3072, 3081, 3090, 3100, 3109, 3118, 3127, 3136, 3145, 3154, 3163, 3172, 3181, 3190, 3200, 3209, 3218, 3227, 3236, 3245, 3254, 3263, 3272, 3281, 3290, 3300, 3309, 3318, 3327, 3336, 3345, 3354, 3363, 3372, 3381, 3390, 3400, 3409, 3418, 3427, 3436, 3445, 3454, 3463, 3472, 3481, 3490, 3500, 3509, 3518, 3527, 3536, 3545, 3554, 3563, 3572, 3581, 3590, 3600, 3609, 3618, 3627, 3636, 3645, 3654, 3663, 3672, 3681, 3690, 3700, 3709, 3718, 3727, 3736, 3745, 3754, 3763, 3772, 3781, 3790, 3800, 3809, 3818, 3827, 3836, 3845, 3854, 3863, 3872, 3881, 3890, 3900, 3909, 3918, 3927, 3936, 3945, 3954, 3963, 3972, 3981, 3990, 4000, 4009, 4018, 4027, 4036, 4045, 4054, 4063, 4072, 4081, 4090, 4100, 4109, 4118, 4127, 4136, 4145, 4154, 4163, 4172, 4181, 4190, 4200, 4209, 4218, 4227, 4236, 4245, 4254, 4263, 4272, 4281, 4290, 4300, 4309, 4318, 4327, 4336, 4345, 4354, 4363, 4372, 4381, 4390, 4400, 4409, 4418, 4427, 4436, 4445, 4454, 4463, 4472, 4481, 4490, 4500, 4509, 4518, 4527, 4536, 4545, 4554, 4563, 4572, 4581, 4590, 4600, 4609, 4618, 4627, 4636, 4645, 4654, 4663, 4672, 4681, 4690, 4700, 4709, 4718, 4727, 4736, 4745, 4754, 4763, 4772, 4781, 4790, 4800, 4809, 4818, 4827, 4836, 4845, 4854, 4863, 4872, 4881, 4890, 4900, 4909, 4918, 4927, 4936, 4945, 4954, 4963, 4972, 4981, 4990, 5000, 5009, 5018, 5027, 5036, 5045, 5054, 5063, 5072, 5081, 5090, 5100, 5109, 5118, 5127, 5136, 5145, 5154, 5163, 5172, 5181, 5190, 5200, 5209, 5218, 5227, 5236, 5245, 5254, 5263, 5272, 5281, 5290, 5300, 5309, 5318, 5327, 5336, 5345, 5354, 5363, 5372, 5381, 5390, 5400, 5409, 5418, 5427, 5436, 5445, 5454, 5463, 5472, 5481, 5490, 5500, 5509, 5518, 5527, 5536, 5545, 5554, 5563, 5572, 5581, 5590, 5600, 5609, 5618, 5627, 5636, 5645, 5654, 5663, 5672, 5681, 5690, 5700, 5709, 5718, 5727, 5736, 5745, 5754, 5763, 5772, 5781, 5790, 5800, 5809, 5818, 5827, 5836, 5845, 5854, 5863, 5872, 5881, 5890, 5900, 5909, 5918, 5927, 5936, 5945, 5954, 5963, 5972, 5981, 5990, 6000, 6009, 6018, 6027, 6036, 6045, 6054, 6063, 6072, 6081, 6090, 6100, 6109, 6118, 6127, 6136, 6145, 6154, 6163, 6172, 6181, 6190, 6200, 6209, 6218, 6227, 6236, 6245, 6254, 6263, 6272, 6281, 6290, 6300, 6309, 6318, 6327, 6336, 6345, 6354, 6363, 6372, 6381, 6390, 6400, 6409, 6418, 6427, 6436, 6445, 6454, 6463, 6472, 6481, 6490, 6500, 6509, 6518, 6527, 6536, 6545, 6554, 6563, 6572, 6581, 6590, 6600, 6609, 6618, 6627, 6636, 6645, 6654, 6663, 6672, 6681, 6690, 6700, 6709, 6718, 6727, 6736, 6745, 6754, 6763, 6772, 6781, 6790, 6800, 6809, 6818, 6827, 6836, 6845, 6854, 6863, 6872, 6881, 6890, 6900, 6909, 6918, 6927, 6936, 6945, 6954, 6963, 6972, 6981, 6990, 7000, 7009, 7018, 7027, 7036, 7045, 7054, 7063, 7072, 7081, 7090, 7100, 7109, 7118, 7127, 7136, 7145, 7154, 7163, 7172, 7181, 7190, 7200, 7209, 7218, 7227, 7236, 7245, 7254, 7263, 7272, 7281, 7290, 7300, 7309, 7318, 7327, 7336, 7345, 7354, 7363, 7372, 7381, 7390, 7400, 7409, 7418, 7427, 7436, 7445, 7454, 7463, 7472, 7481, 7490, 7500, 7509, 7518, 7527, 7536, 7545, 7554, 7563, 7572, 7581, 7590, 7600, 7609, 7618, 7627, 7636, 7645, 7654, 7663, 7672, 7681, 7690, 7700, 7709, 7718, 7727, 7736, 7745, 7754, 7763, 7772, 7781, 7790, 7800, 7809, 7818, 7827, 7836, 7845, 7854, 7863, 7872, 7881, 7890, 7900, 7909, 7918, 7927, 7936, 7945, 7954, 7963, 7972, 7981, 7990, 8000, 8009, 8018, 8027, 8036, 8045, 8054, 8063, 8072, 8081, 8090, 8100, 8109, 8118, 8127, 8136, 8145, 8154, 8163, 8172, 8181, 8190, 8200, 8209, 8218, 8227, 8236, 8245, 8254, 8263, 8272, 8281, 8290, 8300, 8309, 8318, 8327, 8336, 8345, 8354, 8363, 8372, 8381, 8390, 8400, 8409, 8418, 8427, 8436, 8445, 8454, 8463, 8472, 8481, 8490, 8500, 8509, 8518, 8527, 8536, 8545, 8554, 8563, 8572, 8581, 8590, 8600, 8609, 8618, 8627, 8636, 8645, 8654, 8663, 8672, 8681, 8690, 8700, 8709, 8718, 8727, 8736, 8745, 8754, 8763, 8772, 8781, 8790, 8800, 8809, 8818, 8827, 8836, 8845, 8854, 8863, 8872, 8881, 8890, 8900, 8909, 8918, 8927, 8936, 8945, 8954, 8963, 8972, 8981, 8990, 9000, 9009, 9018, 9027, 9036, 9045, 9054, 9063, 9072, 9081, 9090, 9100, 9109, 9118, 9127, 9136, 9145, 9154, 9163, 9172, 9181, 9190, 9200, 9209, 9218, 9227, 9236, 9245, 9254, 9263, 9272, 9281, 9290, 9300, 9309, 9318, 9327, 9336, 9345, 9354, 9363, 9372, 9381, 9390, 9400, 9409, 9418, 9427, 9436, 9445, 9454, 9463, 9472, 9481, 9490, 9500, 9509, 9518, 9527, 9536, 9545, 9554, 9563, 9572, 9581, 9590, 9600, 9609, 9618, 9627, 9636, 9645, 9654, 9663, 9672, 9681, 9690, 9700, 9709, 9718, 9727, 9736, 9745, 9754, 9763, 9772, 9781, 9790, 9800, 9809, 9818, 9827, 9836, 9845, 9854, 9863, 9872, 9881, 9890, 9900, 9909, 9918, 9927, 9936, 9945, 9954, 9963, 9972, 9981, 9990, 10000, 10009, 10018, 10027, 10036, 10045, 10054, 10063, 10072, 10081, 10090, 10100, 10109, 10118, 10127, 10136, 10145, 10154, 10163, 10172, 10181, 10190, 10200, 10209, 10218, 10227, 10236, 10245, 10254, 10263, 10272, 10281, 10290, 10300, 10309, 10318, 10327, 10336, 10345, 10354, 10363, 10372, 10381, 10390, 10400, 10409, 10418, 10427, 10436, 10445, 10454, 10463, 10472, 10481, 10490, 10500, 10509, 10518, 10527, 10536, 10545, 10554, 10563, 10572, 10581, 10590, 10600, 10609, 10618, 10627, 10636, 10645, 10654, 10663, 10672, 10681, 10690, 10700, 10709, 10718, 10727, 10736, 10745, 10754, 10763, 10772, 10781, 10790, 10800, 10809, 10818, 10827, 10836, 10845, 10854, 10863, 10872, 10881, 10890, 10900, 10909, 10918, 10927, 10936, 10945, 10954, 10963, 10972, 10981, 10990, 11000, 11009, 11018, 11027, 11036, 11045, 11054, 11063, 11072, 11081, 11090, 11100, 11109, 11118, 11127, 11136, 11145, 11154, 11163, 11172, 11181, 11190, 11200, 11209, 11218, 11227, 11236, 11245, 11254, 11263, 11272, 11281, 11290, 11300, 11309, 11318, 11327, 11336, 11345, 11354, 11363, 11372, 11381, 11390, 11400, 11409, 11418, 11427, 11436, 11445, 11454, 11463, 11472, 11481, 11490, 11500, 11509, 11518, 11527, 11536, 11545, 11554, 11563, 11572, 11581, 11590, 11600, 11609, 11618, 11627, 11636, 11645, 11654, 11663, 11672, 11681, 11690, 11700, 11709, 11718, 11727, 11736, 11745, 11754, 11763, 11772, 11781, 11790, 11800, 11809, 11818, 11827, 11836, 11845, 11854, 11863, 11872, 11881, 11890, 11900, 11909, 11918, 11927, 11936, 11945, 11954, 11963, 11972, 11981, 11990, 12000, 12009, 12018, 12027, 12036, 12045, 12054, 12063, 12072, 12081, 12090, 12100, 12109, 12118, 12127, 12136, 12145, 12154, 12163, 12172, 12181, 12190, 12200, 12209, 12218, 12227, 12236, 12245, 12254, 12263, 12272, 12281, 12290, 12300, 12309, 12318, 12327, 12336, 12345, 12354, 12363, 12372, 12381, 12390, 12400, 12409, 12418, 12427, 12436, 12445, 12454, 12463, 12472, 12481, 12490, 12500, 12509, 12518, 12527, 12536, 12545, 12554, 12563, 12572, 12581, 12590, 12600, 12609, 12618, 12627, 12636, 12645, 12654, 12663, 12672, 12681, 12690, 12700, 12709, 12718, 12727, 12736, 12745, 12754, 12763, 12772, 12781, 12790, 12800, 12809, 12818, 12827, 12836, 12845, 12854, 12863, 12872, 12881, 12890, 12900, 12909, 12918, 12927, 12936, 12945, 12954, 12963, 12972, 12981, 12990, 13000, 13009, 13018, 13027, 13036, 13045, 13054, 13063, 13072, 13081, 13090, 13100, 13109, 13118, 13127, 13136, 13145, 13154, 13163, 13172, 13181, 13190, 13200, 13209, 13218, 13227, 13236, 13245, 13254, 13263, 13272, 13281, 13290, 13300, 13309, 13318, 13327, 13336, 13345, 13354, 13363, 13372, 13381, 13390, 13400, 13409, 13418, 13427, 13436, 13445, 13454, 13463, 13472, 13481, 13490, 13500, 13509, 13518, 13527, 13536, 13545, 13554, 13563, 13572, 13581, 13590, 13600, 13609, 13618, 13627, 13636, 13645, 13654, 13663, 13672, 13681, 13690, 13700, 13709, 13718, 13727, 13736, 13745, 13754, 13763, 13772, 13781, 13790, 13800, 13809, 13818, 13827, 13836, 13845, 13854, 13863, 13872, 13881, 13890, 13900, 13909, 13918, 13927, 13936, 13945, 13954, 13963, 13972, 13981, 13990, 14000, 14009, 14018, 14027, 14036, 14045, 14054, 14063, 14072, 14081, 14090, 14100, 14109, 14118, 14127, 14136, 14145, 14154, 14163, 14172, 14181, 14190, 14200, 14209, 14218, 14227, 14236, 14245, 14254, 14263, 14272, 14281, 14290, 14300, 14309, 14318, 14327, 14336, 14345, 14354, 14363, 14372, 14381, 14390, 14400, 14409, 14418, 14427, 14436, 14445, 14454, 14463, 14472, 14481, 14490, 14500, 14509, 14518, 14527, 14536, 14545, 14554, 14563, 14572, 14581, 14590, 14600, 14609, 14618, 14627, 14636, 14645, 14654, 14663, 14672, 14681, 14690, 14700, 14709, 14718, 14727, 14736, 14745, 14754, 14763, 14772, 14781, 14790, 14800, 14809, 14818, 14827, 14836, 14845, 14854, 14863, 14872, 14881, 14890, 14900, 14909, 14918, 14927, 14936, 14945, 14954, 14963, 14972, 14981, 14990, 15000, 15009, 15018, 15027, 15036, 15045, 15054, 15063, 15072, 15081, 15090, 15100, 15109, 15118, 15127, 15136, 15145, 15154, 15163, 15172, 15181, 15190, 15200, 15209, 15218, 15227, 15236, 15245, 15254, 15263, 15272, 15281, 15290, 15300, 15309, 15318, 15327, 15336, 15345, 15354, 15363, 15372, 15381, 15390, 15400, 15409, 15418, 15427, 15436, 15445, 15454, 15463, 15472, 15481, 15490, 15500, 15509, 15518, 15527, 15536, 15545, 15554, 15563, 15572, 15581, 15590, 15600, 15609, 15618, 15627, 15636, 15645, 15654, 15663, 15672, 15681, 15690, 15700, 15709, 15718, 15727, 15736, 15745, 15754, 15763, 15772, 15781, 15790, 15800, 15809, 15818, 15827, 15836, 15845, 15854, 15863, 15872, 15881, 15890, 15900, 15909, 15918, 15927, 15936, 15945, 15954, 15963, 15972, 15981, 15990, 16000, 16009, 16018, 16027, 16036, 16045, 16054, 16063, 16072, 16081, 16090, 16100, 16109, 16118, 16127, 16136, 16145, 16154, 16163, 16172, 16181, 16190, 16200, 16209, 16218, 16227, 16236, 16245, 16254, 16263, 16272, 16281, 16290, 16300, 16309, 16318, 16327, 16336, 16345, 16354, 16363, 16372, 16381, 16390, 16400, 16409, 16418, 16427, 16436, 16445, 16454, 16463, 16472, 16481, 16490, 16500, 16509, 16518, 16527, 16536, 16545, 16554, 16563, 16572, 16581, 16590, 16600, 16609, 16618, 16627, 16636, 16645, 16654, 16663, 16672, 16681, 16690, 16700, 16709, 16718, 16727, 16736, 16745, 16754, 16763, 16772, 16781, 16790, 16800, 16809, 16818, 16827, 16836, 16845, 16854, 16863, 16872, 16881, 16890, 16900, 16909, 16918, 16927, 16936, 16945, 16954, 16963, 16972, 16981, 16990, 17000, 17009, 17018, 17027, 17036, 17045, 17054, 17063, 17072, 17081, 17090, 17100, 17109, 17118, 17127, 17136, 17145, 17154, 17163, 17172, 17181, 17190, 17200, 17209, 17218, 17227, 17236, 17245, 17254, 17263, 17272, 17281, 17290, 17300, 17309, 17318, 17327, 17336, 17345, 17354, 17363, 17372, 17381, 17390, 1740

HCF $\rightarrow$ Highest Common Factor $\rightarrow$ Limited

LCM
300

10	20, 30, 50	is LCM
2	2, 3, 5	
3	1, 3, 5	
5	1, 1, 5	
	1, 1, 1	

6 $\rightarrow$ 1, 2, 3, 6
24 $\rightarrow$ 1, 2, 3, 4, 6, 8, 12, 24

HCF = 6

Imp
(*)

यदि $a, b, c, d, \dots$ से किसी संख्या में भाग देने पर
प्रत्येक दशा में x शेष बचता है तो

वह संख्या = $LCM(a, b, c, d) + x$



1. What is the least number which when divided by 8, 10 or 12 leaves a remainder of 7 in each case?

वह न्यूनतम संख्या कौन-सी है जिसे 8, 10 अथवा 12 से विभक्त करने पर प्रत्येक दशा में 7 शेष बचे?

(a) 127

(b) 137

$$LCM = 2 \times 2 \times 2 \times 3 \times 5 = 120$$

(c) 177

(d) 267

(e) इनमें से कोई नहीं

$$\text{Required No} \rightarrow LCM + 7 = 127$$

2	8, 10, 12
2	4, 5, 6
2	2, 5, 3
3	1, 5, 3
5	



2. 17. What is the smallest number which when divided by 8, 9, 12, 15 leaves a remainder of 1 in each case?

वह छोटी से छोटी संख्या कौन-सी है जिसे 8, 9, 12, 15 से भाग देने पर प्रत्येक दशा में 1 शेष बचे ?

(a) 179 178

(b) 181 180

(c) 359 358

(d) 361 360

$$LCM + 1 \Rightarrow 360 + 1 \\ \Rightarrow 361$$

LCM

$$LCM \Rightarrow 2 \times 2 \times 2 \times 3 \times 3 \times 5 \\ = 360$$

$$\begin{array}{l} 2 \mid 8, 9, 12, 15 \\ 2 \mid 4, 9, 6, 15 \\ 2 \mid 2, 9, 3, 15 \\ 3 \mid 1, 9, 3, 15 \\ 3 \mid 1, 3, 1, 5 \\ 5 \mid \end{array}$$



3. What is the smallest number which when divided by 12, 21 and 35 leaves the same remainder as 2?

वह छोटी से छोटी संख्या कौन सी है जिसे 12, 21 और 35 से विभाजित करने पर वही शेषफल 2 रहता है?

(a) 632

(c) 212

(b) 422

(d) 844

LCM + शेषफल

420 + 2

LCM $\rightarrow$ 420

$$\begin{array}{l}
 2 \mid 12, 21, 35 \\
 \hline
 2 \mid 6, 21, 35 \\
 \hline
 3 \mid 3, 21, 35 \\
 \hline
 5 \mid 1, 7, 35 \\
 \hline
 7 \mid 1, 7, 7 \\
 \hline
 1, 1, 1
 \end{array}$$



4. LCM of two prime numbers x and y ($x > y$) is 253. The difference between the numbers x and y is:

दो अभाज्य संख्याओं x और y ($x > y$) का LCM 253 है। संख्याओं x और y के बीच का अंतर है:

(a) 14

(b) 16

(c) 11

(d) 12

253

11 × 23

$x = 23$

$y = 11$

12



5. What is the least number which when divided by 8, 10 or 12 leaves a remainder of 7 in each case?

वह न्यूनतम संख्या कौन-सी है जिसे 8, 10 अथवा 12 से विभक्त करने पर प्रत्येक दशा में 7 शेष बचे?

- (a) 127 (b) 137
(c) 177 (d) 267
(e) इनमें से कोई नहीं



6. What is the smallest number which when divided by 8, 9, 12, 15 leaves a remainder of 1 in each case?

वह छोटी से छोटी संख्या कौन-सी है जिसे 8, 9, 12, 15 से भाग देने पर प्रत्येक दशा में 1 शेष बचे ?

(a) 179

(b) 181

(c) 359

(d) 361



7. In which of the following that **CANNOT** be the L.C.M. of 3, 4 and X.

निम्नलिखित में से कौन सा L.C.M नहीं हो सकता?
3, 4 और X का.

3, 4, X

(a) 60

(b) 24

(c) 18

(d) 36

8. The LCM of 16, 24, 36, 52 and 54 is:

16, 24, 36, 52 और 54 का एलसीएम है:

- ☒ (a) 5616
☒ (b) ~~5216~~
☒ (c) ~~432~~
☒ (d) ~~5618~~

$\overset{8}{16}, \overset{3}{24}, \overset{9}{36}, \overset{13}{52}, 54$
16, 24, 36, 52, 54

LCM → इन सभी संख्याओं से divisible होगा



9. LCM of two prime numbers x and y ($x > y$) is 253. The difference between the numbers x and y is.

दो अभाज्य संख्याओं x और y ($x > y$) का LCM 253 है। संख्याओं x और y के बीच का अंतर है।

(a) 14

(b) 16

(c) 11

(d) 12



10. LCM of $2^4 \times 3^4 \times 5^3$ and $2^2 \times 3^6 \times 5^5 \times 7^2$ is.

$$\text{LCM} \rightarrow 2^4 \times 3^6 \times 5^5 \times 7^2$$

$2^4 \times 3^4 \times 5^3$ और $2^2 \times 3^6 \times 5^5 \times 7^2$ LCM है।

(a) $2^3 \times 3^5 \times 5^4 \times 7$

(b) $2^2 \times 3^2 \times 5^2 \times 7^2$

(c) $2^6 \times 3^{10} \times 5^8 \times 7^2$

(d) $2^4 \times 3^6 \times 5^5 \times 7^2$

* जिस संख्या पर power है वह prime No. होना चाहिए।



11. Find the LCM of $(2^2 \times 3^2 \times 5 \times 7)$, $(2^2 \times 3 \times 5^2 \times 7)$ and $(2 \times 3 \times 5 \times 7)$.

$(2^2 \times 3^2 \times 5 \times 7)$ $(2^2 \times 3 \times 5^2 \times 7)$ और $(2 \times 3 \times 5 \times 7)$ का LCM ज्ञात करें।

(a) 6300

~~(b) 7200~~

~~(c) 9000~~

(d) 8400 $\Rightarrow 12$

$$\begin{aligned} \text{LCM} &= 2^2 \times 3^2 \times 5^2 \times 7 \\ &\Rightarrow 4 \times 9 \times 25 \times 7 \end{aligned}$$

$$Q \rightarrow A \Rightarrow 2^9 \times 3^4 \times 7^3 \times 11^7 \times 13^0 \times 17^0$$

$$B \Rightarrow 7^9 \times 11^8 \times 13^{17} \times 2^0 \times 3^0 \times 17^0$$

$$C \Rightarrow 2^{11} \times 3^{21} \times 17^9 \times 7^0 \times 11^0 \times 13^0$$

$$LCM \Rightarrow 2^{11} \times 3^{21} \times 7^9 \times 11^8 \times 13^{17} \times 17^9$$



12. In which of the following that CANNOT be the L.C.M. of 3, 4 and X.

**निम्नलिखित में से कौन सा L.C.M नहीं हो सकता?
3, 4 और x का.**

(a) 60

(b) 24

(c) 18

(d) 36

13. The LCM of $8^2 \times 6^3$ and $4^6 \times 9^3$ is:

$8^2 \times 6^3$ और $4^6 \times 9^3$ का एलसीएम है:

(a) $2^9 \times 3^6$

(b) $2^9 \times 3^3$

(c) $2^{12} \times 3^3$

(d) $2^{12} \times 3^6$

Handwritten prime factorization of $8^2 \times 6^3$:

$$(2^3)^2 \times (2 \times 3)^3$$

$$2^6 \times 2^3 \times 3^3$$

$$2^9 \times 3^3$$

Handwritten prime factorization of $4^6 \times 9^3$:

$$(2^2)^6 \times (3^2)^3$$

$$2^{12} \times 3^6$$

Handwritten prime factorization of $4^6 \times 9^3$:

$$2^9 \times 3^3$$

Handwritten prime factorization of $4^6 \times 9^3$:

$$2^{12} \times 3^6$$

Handwritten prime factorization of $4^6 \times 9^3$:

$$2^9 \times 3^3$$

Handwritten LCM calculation:

$$LCM \rightarrow 2^{12} \times 3^6$$



14. LCM of $2^4 \times 3^4 \times 5^3$ and $2^2 \times 3^6 \times 5^5 \times 7^2$ is.

$2^4 \times 3^4 \times 5^3$ और $2^2 \times 3^6 \times 5^5 \times 7^2$ का LCM है।

LCM $\rightarrow 2^4 \times 3^6 \times 5^5 \times 7^2$

(a) $2^3 \times 3^5 \times 5^4 \times 7$

(b) $2^2 \times 3^2 \times 5^2 \times 7^2$

(c) $2^6 \times 3^{10} \times 5^8 \times 7^2$

(d) $2^4 \times 3^6 \times 5^5 \times 7^2$

2^2 , 2^3 का LCM

$$\begin{array}{r} 2 \overline{) 4, 8} \\ 2 \overline{) 2, 4} \\ 2 \overline{) 1, 2} \\ \underline{1, 1} \end{array}$$

2^3



15. Find the least number that when divided by 9, 8, 10 and 12 leaves a remainder 3 in each case.

वह न्यूनतम संख्या ज्ञात कीजिए जिसे 9, 8, 10 और 12 से विभाजित करने पर प्रत्येक स्थिति में 3 शेष बचता है।

(a) 365

(b) 361

(c) 363

(d) 367

$$\begin{array}{l}
 2 \mid 5, 6, 8, 9, 12 \\
 \hline
 2 \mid 5, 3, 4, 9, 6 \\
 \hline
 2 \mid 5, 3, 2, 9, 3 \\
 \hline
 3 \mid 5, 3, 1, 9, 3 \\
 \hline
 3 \mid 5, 1, 1, 3, 1 \\
 \hline
 5 \mid 5, 1, 1, 1, 1 \\
 \hline
 \end{array}$$

$$LCM = 360$$

completely divisible by 13?

वह छोटी से छोटी संख्या कौन-सी होगी जिसे 5, 6, 8, 9, 12 से भाग देने पर प्रत्येक दशा में 1 शेष बचे परन्तु 13 से पूर्णतया विभक्त हो ?

(a) 361

(b) 721

(c) 1801

(d) 3601

$$LCM = 360K + 1$$

$$\Rightarrow \frac{351K + 9K + 1}{13}$$

$$\frac{9K + 1}{13}$$

$$\begin{array}{l}
 K=1 \\
 K=2 \\
 K=3 \\
 K=4 \\
 K=5 \\
 K=6 \\
 K=7 \\
 K=8 \\
 K=9 \\
 K=10
 \end{array}$$



17. What will be the smallest number which when divided by 5, 6, 7, 8 leaves a remainder of 3 in each case but when divided by 9 leaves a remainder of zero?

वह छोटी से छोटी संख्या कौन-सी होगी जिसे 5, 6, 7, 8 से भाग देने पर प्रत्येक दशा में 3 शेष बचे परन्तु 9 से भाग देने पर शून्य शेष बचे ?

~~(a)~~ 1677

(b) 1683

~~(c)~~ 2523

~~(d)~~ 3363