

12/2/24

## HCF & LCM of Numbers

(24)

### Lesson 1 Introduction

LCM - Least Common

Multiple

\* Traditional Method

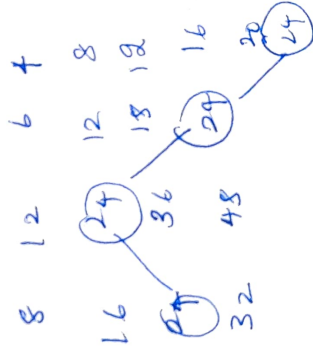
\* Factorization

\* Shortcut Method

\* Long Division

\* Traditional Method

(i) Find LCM of 8, 12, 16, 4



LCM: 24.

Least Common  
is the  
# given numbers  
has multiple  
value common  
to all given  
values

# Factorization method

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, 103, 107, 109, 113, 127, 131, 137, 139, 149, 151, 157, 163, 167, 173, 179, 181, 187, 191, 193, 197, 199, 211, 223, 227, 229, 233, 239, 241, 251, 257, 263, 269, 271, 277, 281, 283, 293, 307, 311, 313, 317, 331, 337, 347, 349, 353, 359, 367, 373, 379, 383, 389, 397, 401, 409, 419, 421, 431, 433, 439, 443, 449, 457, 461, 463, 467, 473, 479, 487, 491, 493, 499, 503, 509, 521, 523, 527, 531, 539, 541, 547, 557, 563, 569, 571, 577, 581, 587, 593, 599, 601, 607, 613, 617, 619, 623, 629, 631, 637, 641, 643, 647, 653, 659, 661, 667, 671, 673, 677, 683, 689, 691, 697, 701, 703, 709, 713, 719, 727, 731, 733, 739, 743, 749, 751, 757, 761, 763, 767, 773, 779, 781, 787, 791, 793, 797, 803, 809, 811, 817, 821, 823, 827, 829, 833, 837, 839, 841, 847, 851, 853, 857, 859, 863, 869, 871, 877, 881, 883, 887, 893, 897, 901, 907, 911, 913, 917, 919, 923, 927, 931, 937, 941, 943, 947, 953, 959, 961, 967, 971, 973, 977, 983, 989, 991, 993, 997, 1003, 1009, 1013, 1017, 1019, 1021, 1023, 1027, 1031, 1033, 1037, 1039, 1043, 1047, 1049, 1051, 1053, 1057, 1059, 1063, 1067, 1069, 1073, 1077, 1079, 1081, 1083, 1087, 1091, 1093, 1097, 1103, 1107, 1109, 1113, 1117, 1121, 1123, 1127, 1129, 1133, 1137, 1139, 1143, 1147, 1149, 1151, 1153, 1157, 1159, 1163, 1167, 1169, 1173, 1177, 1179, 1181, 1183, 1187, 1191, 1193, 1197, 1201, 1203, 1207, 1211, 1213, 1217, 1219, 1223, 1227, 1231, 1233, 1237, 1239, 1243, 1247, 1249, 1251, 1253, 1257, 1259, 1263, 1267, 1269, 1273, 1277, 1279, 1281, 1283, 1287, 1291, 1293, 1297, 1301, 1303, 1307, 1311, 1313, 1317, 1319, 1323, 1327, 1331, 1333, 1337, 1339, 1343, 1347, 1349, 1351, 1353, 1357, 1359, 1363, 1367, 1369, 1373, 1377, 1379, 1381, 1383, 1387, 1391, 1393, 1397, 1401, 1403, 1407, 1411, 1413, 1417, 1419, 1423, 1427, 1431, 1433, 1437, 1439, 1443, 1447, 1449, 1451, 1453, 1457, 1459, 1463, 1467, 1469, 1473, 1477, 1479, 1481, 1483, 1487, 1491, 1493, 1497, 1501, 1503, 1507, 1511, 1513, 1517, 1519, 1523, 1527, 1531, 1533, 1537, 1539, 1543, 1547, 1549, 1551, 1553, 1557, 1559, 1563, 1567, 1569, 1573, 1577, 1579, 1581, 1583, 1587, 1591, 1593, 1597, 1601, 1603, 1607, 1611, 1613, 1617, 1619, 1623, 1627, 1631, 1633, 1637, 1639, 1643, 1647, 1649, 1651, 1653, 1657, 1659, 1663, 1667, 1669, 1673, 1677, 1679, 1681, 1683, 1687, 1691, 1693, 1697, 1701, 1703, 1707, 1711, 1713, 1717, 1719, 1723, 1727, 1731, 1733, 1737, 1739, 1743, 1747, 1749, 1751, 1753, 1757, 1759, 1763, 1767, 1769, 1773, 1777, 1779, 1781, 1783, 1787, 1791, 1793, 1797, 1801, 1803, 1807, 1811, 1813, 1817, 1819, 1823, 1827, 1831, 1833, 1837, 1839, 1843, 1847, 1849, 1851, 1853, 1857, 1859, 1863, 1867, 1869, 1873, 1877, 1879, 1881, 1883, 1887, 1891, 1893, 1897, 1901, 1903, 1907, 1911, 1913, 1917, 1919, 1923, 1927, 1931, 1933, 1937, 1939, 1943, 1947, 1949, 1951, 1953, 1957, 1959, 1963, 1967, 1969, 1973, 1977, 1979, 1981, 1983, 1987, 1991, 1993, 1997, 2001, 2003, 2007, 2011, 2013, 2017, 2019, 2023, 2027, 2031, 2033, 2037, 2039, 2043, 2047, 2049, 2051, 2053, 2057, 2059, 2063, 2067, 2069, 2073, 2077, 2079, 2081, 2083, 2087, 2091, 2093, 2097, 2101, 2103, 2107, 2111, 2113, 2117, 2119, 2123, 2127, 2131, 2133, 2137, 2139, 2143, 2147, 2149, 2151, 2153, 2157, 2159, 2163, 2167, 2169, 2173, 2177, 2179, 2181, 2183, 2187, 2191, 2193, 2197, 2201, 2203, 2207, 2211, 2213, 2217, 2219, 2223, 2227, 2231, 2233, 2237, 2239, 2243, 2247, 2249, 2251, 2253, 2257, 2259, 2263, 2267, 2269, 2273, 2277, 2279, 2281, 2283, 2287, 2291, 2293, 2297, 2301, 2303, 2307, 2311, 2313, 2317, 2319, 2323, 2327, 2331, 2333, 2337, 2339, 2343, 2347, 2349, 2351, 2353, 2357, 2359, 2363, 2367, 2369, 2373, 2377, 2379, 2381, 2383, 2387, 2391, 2393, 2397, 2401, 2403, 2407, 2411, 2413, 2417, 2419, 2423, 2427, 2431, 2433, 2437, 2439, 2443, 2447, 2449, 2451, 2453, 2457, 2459, 2463, 2467, 2469, 2473, 2477, 2479, 2481, 2483, 2487, 2491, 2493, 2497, 2501, 2503, 2507, 2511, 2513, 2517, 2519, 2523, 2527, 2531, 2533, 2537, 2539, 2543, 2547, 2549, 2551, 2553, 2557, 2559, 2563, 2567, 2569, 2573, 2577, 2579, 2581, 2583, 2587, 2591, 2593, 2597, 2601, 2603, 2607, 2611, 2613, 2617, 2619, 2623, 2627, 2631, 2633, 2637, 2639, 2643, 2647, 2649, 2651, 2653, 2657, 2659, 2663, 2667, 2669, 2673, 2677, 2679, 2681, 2683, 2687, 2691, 2693, 2697, 2701, 2703, 2707, 2711, 2713, 2717, 2719, 2723, 2727, 2731, 2733, 2737, 2739, 2743, 2747, 2749, 2751, 2753, 2757, 2759, 2763, 2767, 2769, 2773, 2777, 2779, 2781, 2783, 2787, 2791, 2793, 2797, 2801, 2803, 2807, 2811, 2813, 2817, 2819, 2823, 2827, 2831, 2833, 2837, 2839, 2843, 2847, 2849, 2851, 2853, 2857, 2859, 2863, 2867, 2869, 2873, 2877, 2879, 2881, 2883, 2887, 2891, 2893, 2897, 2901, 2903, 2907, 2911, 2913, 2917, 2919, 2923, 2927, 2931, 2933, 2937, 2939, 2943, 2947, 2949, 2951, 2953, 2957, 2959, 2963, 2967, 2969, 2973, 2977, 2979, 2981, 2983, 2987, 2991, 2993, 2997, 3001, 3003, 3007, 3011, 3013, 3017, 3019, 3023, 3027, 3031, 3033, 3037, 3039, 3043, 3047, 3049, 3051, 3053, 3057, 3059, 3063, 3067, 3069, 3073, 3077, 3079, 3081, 3083, 3087, 3091, 3093, 3097, 3101, 3103, 3107, 3111, 3113, 3117, 3119, 3123, 3127, 3131, 3133, 3137, 3139, 3143, 3147, 3149, 3151, 3153, 3157, 3159, 3163, 3167, 3169, 3173, 3177, 3179, 3181, 3183, 3187, 3191, 3193, 3197, 3201, 3203, 3207, 3211, 3213, 3217, 3219, 3223, 3227, 3231, 3233, 3237, 3239, 3243, 3247, 3249, 3251, 3253, 3257, 3259, 3263, 3267, 3269, 3273, 3277, 3279, 3281, 3283, 3287, 3291, 3293, 3297, 3301, 3303, 3307, 3311, 3313, 3317, 3319, 3323, 3327, 3331, 3333, 3337, 3339, 3343, 3347, 3349, 3351, 3353, 3357, 3359, 3363, 3367, 3369, 3373, 3377, 3379, 3381, 3383, 3387, 3391, 3393, 3397, 3401, 3403, 3407, 3411, 3413, 3417, 3419, 3423, 3427, 3431, 3433, 3437, 3439, 3443, 3447, 3449, 3451, 3453, 3457, 3459, 3463, 3467, 3469, 3473, 3477, 3479, 3481, 3483, 3487, 3491, 3493, 3497, 3501, 3503, 3507, 3511, 3513, 3517, 3519, 3523, 3527, 3531, 3533, 3537, 3539, 3543, 3547, 3549, 3551, 3553, 3557, 3559, 3563, 3567, 3569, 3573, 3577, 3579, 3581, 3583, 3587, 3591, 3593, 3597, 3601, 3603, 3607, 3611, 3613, 3617, 3619, 3623, 3627, 3631, 3633, 3637, 3639, 3643, 3647, 3649, 3651, 3653, 3657, 3659, 3663, 3667, 3669, 3673, 3677, 3679, 3681, 3683, 3687, 3691, 3693, 3697, 3701, 3703, 3707, 3711, 3713, 3717, 3719, 3723, 3727, 3731, 3733, 3737, 3739, 3743, 3747, 3749, 3751, 3753, 3757, 3759, 3763, 3767, 3769, 3773, 3777, 3779, 3781, 3783, 3787, 3791, 3793, 3797, 3801, 3803, 3807, 3811, 3813, 3817, 3819, 3823, 3827, 3831, 3833, 3837, 3839, 3843, 3847, 3849, 3851, 3853, 3857, 3859, 3863, 3867, 3869, 3873, 3877, 3879, 3881, 3883, 3887, 3891, 3893, 3897, 3901, 3903, 3907, 3911, 3913, 3917, 3919, 3923, 3927, 3931, 3933, 3937, 3939, 3943, 3947, 3949, 3951, 3953, 3957, 3959, 3963, 3967, 3969, 3973, 3977, 3979, 3981, 3983, 3987, 3991, 3993, 3997, 4001, 4003, 4007, 4011, 4013, 4017, 4019, 4023, 4027, 4031, 4033, 4037, 4039, 4043, 4047, 4049, 4051, 4053, 4057, 4059, 4063, 4067, 4069, 4073, 4077, 4079, 4081, 4083, 4087, 4091, 4093, 4097, 4101, 4103, 4107, 4111, 4113, 4117, 4119, 4123, 4127, 4131, 4133, 4137, 4139, 4143, 4147, 4149, 4151, 4153, 4157, 4159, 4163, 4167, 4169, 4173, 4177, 4179, 4181, 4183, 4187, 4191, 4193, 4197, 4201, 4203, 4207, 4211, 4213, 4217, 4219, 4223, 4227, 4231, 4233, 4237, 4239, 4243, 4247, 4249, 4251, 4253, 4257, 4259, 4263, 4267, 4269, 4273, 4277, 4279, 4281, 4283, 4287, 4291, 4293, 4297, 4301, 4303, 4307, 4311, 4313, 4317, 4319, 4323, 4327, 4331, 4333, 4337, 4339, 4343, 4347, 4349, 4351, 4353, 4357, 4359, 4363, 4367, 4369, 4373, 4377, 4379, 4381, 4383, 4387, 4391, 4393, 4397, 4401, 4403, 4407, 4411, 4413, 4417, 4419, 4423, 4427, 4431, 4433, 4437, 4439, 4443, 4447, 4449, 4451, 4453, 4457, 4459, 4463, 4467, 4469, 4473, 4477, 4479, 4481, 4483, 4487, 4491, 4493, 4497, 4501, 4503, 4507, 4511, 4513, 4517, 4519, 4523, 4527, 4531, 4533, 4537, 4539, 4543, 4547, 4549, 4551, 4553, 4557, 4559, 4563, 4567, 4569, 4573, 4577, 4579, 4581, 4583, 4587, 4591, 4593, 4597, 4601, 4603, 4607, 4611, 4613, 4617, 4619, 4623, 4627, 4631, 4633, 4637, 4639, 4643, 4647, 4649, 4651, 4653, 4657, 4659, 4663, 4667, 4669, 4673, 4677, 4679, 4681, 4683, 4687, 4691, 4693, 4697, 4701, 4703, 4707, 4711, 4713, 4717, 4719, 4723, 4727, 4731, 4733, 4737, 4739, 4743, 4747, 4749, 4751, 4753, 4757, 4759, 4763, 4767, 4769, 4773, 4777, 4779, 4781, 4783, 4787, 4791, 4793, 4797, 4801, 4803, 4807, 4811, 4813, 4817, 4819, 4823, 4827, 4831, 4833, 4837, 4839, 4843, 4847, 4849, 4851, 4853, 4857, 4859, 4863, 4867, 4869, 4873, 4877, 4879, 4881, 4883, 4887, 4891, 4893, 4897, 4901, 4903, 4907, 4911, 4913, 4917, 4919, 4923, 4927, 4931, 4933, 4937, 4939, 4943, 4947, 4949, 4951, 4953, 4957, 4959, 4963, 4967, 4969, 4973, 4977, 4979, 4981, 4983, 4987, 4991, 4993, 4997, 5001, 5003, 5007, 5011, 5013, 5017, 5019, 5023, 5027, 5031, 5033, 5037, 5039, 5043, 5047, 5049, 5051, 5053, 5057, 5059, 5063, 5067, 5069, 5073, 5077, 5079, 5081, 5083, 5087, 5091, 5093, 5097, 5101, 5103, 5107, 5111, 5113, 5117, 5119, 5123, 5127, 5131, 5133, 5137, 5139, 5143, 5147, 5149, 5151, 5153, 5157, 5159, 5163, 5167, 5169, 5173, 5177, 5179, 5181, 5183, 5187, 5191, 5193, 5197, 5201, 5203, 5207, 5211, 5213, 5217, 5219, 5223, 5227, 5231, 5233, 5237, 5239, 5243, 5247, 5249, 5251, 5253, 5257, 5259, 5263, 5267, 5269, 5273, 5277, 5279, 5281, 5283, 5287, 5291, 5293, 5297, 5301, 5303, 5307, 5311, 5313, 5317, 5319, 5323, 5327, 5331, 5333, 5337, 5339, 5343, 5347, 5349, 5351, 5353, 5357, 5359, 5363, 5367, 5369, 5373, 5377, 5379, 5381, 5383, 5387, 5391, 5393, 5397, 5401, 5403, 5407, 5411, 5413, 5417, 5419, 5423, 5427, 5431, 5433, 5437, 5439, 5443, 5447, 5449, 5451, 5453, 5457, 5459, 5463, 5467, 5469, 5473, 5477, 5479, 5481, 5483, 5487, 5491, 5493, 5497, 5501, 5503, 5507, 5511, 5513, 5517, 5519, 5523, 5527, 5531, 5533, 5537, 5539, 5543, 5547, 5549, 5551, 5553, 5557, 5559, 5563, 5567, 5569, 5573, 5577, 5579, 5581, 5583, 5587, 5591, 5593, 5597, 5601, 5603, 5607, 5611, 5613, 5617, 5619, 5623, 5627, 5631, 5633, 5637, 5639, 5643, 5647, 5649, 5651, 5653, 5657, 5659, 5663, 5667, 5669, 5673, 5677, 5679, 5681, 5683, 5687, 5691, 5693, 5697, 5701, 5703, 5707, 5711, 5713, 5717, 5719, 5723, 5727, 5731, 5733, 5737, 5739, 5743, 5747, 5749, 5751, 5753, 5757, 5759, 5763, 5767, 5769, 5773, 5777, 5779, 5781, 5783, 5787, 5791, 5793, 5797, 5801, 5803, 5807, 5811, 5813, 5817, 5819, 5823, 5827, 5831, 5833, 5837, 5839, 5843, 5847, 5849, 5851, 5853, 5857, 5859, 5863, 5867, 5869, 5873, 5877, 5879, 5881, 5883, 5887, 5891, 5893, 5897, 5901, 5903, 5907, 5911, 5913, 5917, 5919, 5923, 5927, 5931, 5933, 5937, 5939, 5943, 5947, 5949, 5951, 5953, 5957, 5959, 5963, 5967, 5969, 5973, 5977, 5979, 5981, 5983, 5987, 5991, 5993, 5997, 6001, 6003, 6007, 6011, 6013, 6017, 6019, 6023, 6027, 6031, 6033, 6037, 6039, 6043, 6047, 6049, 6051, 6053, 6057, 6059, 6063, 6067, 6069, 6073, 6077, 6079, 6081, 6083, 6087, 6091, 6093, 6097, 6101, 6103, 6107, 6111, 6113, 6117, 6119, 6123, 6127, 6131, 6133, 6137, 6139, 6143, 6147, 6149, 6151, 6153, 6157, 6159, 6163, 6167, 6169, 6173, 6177, 6179, 6181, 6183, 6187, 6191, 6193, 6197, 6201, 6203, 6207, 6211, 6213, 6217, 6219, 6223, 6227, 6231, 6233, 6237, 6239, 6243, 6247, 6249, 6251, 6253, 6257, 6259, 6263, 6267, 6269, 6273, 6277, 6279, 6281, 6283, 6287, 6291, 6293, 6297, 6301, 6303, 6307, 6311, 6313, 6317, 6319, 6323, 6327, 6331, 6333, 6337, 6339, 6343, 6347, 6349, 6351, 6353, 6357, 6359, 6363, 6367, 6369, 6373, 6377, 6379, 6381, 6383, 6387, 6391, 6393, 6397, 6401, 6403, 6407, 6411, 6413, 6417, 6419, 6423, 6427, 6431, 6433, 6437, 6439, 6443, 6447, 6449, 6451, 6453, 6457, 6459, 6463, 6467, 6469, 6473, 6477, 6479, 6481, 6483, 6487, 6491, 6493, 6497, 6501, 6503, 6507, 6511, 6513, 6517, 6519, 6523, 6527, 6531, 6533, 6537, 6539, 6543, 6547, 6549, 6551, 6553, 6557, 6559, 6563, 6567, 6569, 6573, 6577, 6579, 6581, 6583, 6587, 6591, 6593, 6597, 6601, 6603, 6607, 6611, 6613, 6617, 6619, 6623, 6627, 6631, 6633, 6637, 6639, 6643, 6647, 6649, 6651, 6653, 6657, 6659, 6663, 6667, 6669, 6673, 6677, 6679, 6681, 6683, 6687, 6691, 6693, 6697, 6701, 6703, 6707, 6711, 6713, 6717, 6719, 6723, 6727, 6731, 6733, 6737, 6739, 6743, 6747, 6749, 6751, 6753, 6757, 6759, 6763, 6767, 6769, 6773, 6777, 6779, 6781, 6783, 6787, 6791, 6793, 6797, 6801, 6803, 6807, 6811, 6813, 6817, 6819, 6823, 6827, 6831, 6833, 6837, 6839, 6843, 6847, 6849, 6851, 6853, 6857, 6859, 6863, 6867, 6869, 6873, 687

# HCF (Highest Common Factor) Lesson 2

- Traditional Method
- Factorization Method
- Division Method
- Short cut Method

## Traditional Method

Find HCF

$$27, 18, 36$$

Here the number divided by the possibilities

Ex

$$27$$

↓

$$27 \div 3 = 9$$

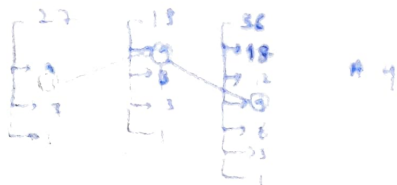
$$27 \div 9 = 3$$

$$27 \div 27 = 1$$

$$27 \div 1 = 27$$

Write numbers from highest to lowest

and common to all numbers. is answer



A 9

## Factorisation Method

$$27, 18, 36$$

$$\begin{array}{l} 3 \overline{) 27} \\ 3 \overline{) 9} \\ 3 \overline{) 3} \\ 1 \end{array} \quad \begin{array}{l} 3 \overline{) 18} \\ 3 \overline{) 6} \\ 3 \overline{) 2} \\ 1 \end{array} \quad \begin{array}{l} 3 \overline{) 36} \\ 3 \overline{) 12} \\ 3 \overline{) 4} \\ 1 \end{array}$$

check the common factor  
are in prime numbers,  
select the lowest among  
them

$$= 3^2 = 9$$

$$12, 6, 8, 4$$

$$\begin{array}{l} 3 \overline{) 12} \\ 2 \overline{) 4} \\ 1 \end{array} \quad \begin{array}{l} 2 \overline{) 6} \\ 2 \overline{) 3} \\ 1 \end{array} \quad \begin{array}{l} 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \overline{) 2} \\ 1 \end{array}$$

$$2^1 \cdot 3^1 \cdot 2^1 \cdot 2^3 \cdot 2^2 = 2^7 = 128$$

## Division Method

(i) with 2 numbers

Find HCF of 70 & 90

$$70 \quad 90$$

HCF 10

How we need to divide  
for values which  
the remainder  
need to come.

$$\begin{array}{r} 1 \\ 70 \overline{) 90} \\ \underline{70} \phantom{0} \\ 20 \phantom{0} \end{array} \quad \begin{array}{r} 3 \\ 20 \overline{) 70} \\ \underline{60} \phantom{0} \\ 10 \phantom{0} \end{array}$$

now here  
integer  
part  
is 10

$46 \overline{) 96}$   
 $132$   
 $132 \overline{) 182}$   
 $132 \overline{) 182}$   
 $132 \overline{) 264}$   
 $132 \overline{) 396}$   
 $132 \overline{) 468}$   
 $132 \overline{) 500}$   
 $132 \overline{) 532}$   
 $132 \overline{) 564}$   
 $132 \overline{) 596}$   
 $132 \overline{) 628}$   
 $132 \overline{) 660}$   
 $132 \overline{) 692}$   
 $132 \overline{) 724}$   
 $132 \overline{) 756}$   
 $132 \overline{) 788}$   
 $132 \overline{) 820}$   
 $132 \overline{) 852}$   
 $132 \overline{) 884}$   
 $132 \overline{) 916}$   
 $132 \overline{) 948}$   
 $132 \overline{) 980}$   
 $132 \overline{) 1012}$   
 $132 \overline{) 1044}$   
 $132 \overline{) 1076}$   
 $132 \overline{) 1108}$   
 $132 \overline{) 1140}$   
 $132 \overline{) 1172}$   
 $132 \overline{) 1204}$   
 $132 \overline{) 1236}$   
 $132 \overline{) 1268}$   
 $132 \overline{) 1300}$   
 $132 \overline{) 1332}$   
 $132 \overline{) 1364}$   
 $132 \overline{) 1396}$   
 $132 \overline{) 1428}$   
 $132 \overline{) 1460}$   
 $132 \overline{) 1492}$   
 $132 \overline{) 1524}$   
 $132 \overline{) 1556}$   
 $132 \overline{) 1588}$   
 $132 \overline{) 1620}$   
 $132 \overline{) 1652}$   
 $132 \overline{) 1684}$   
 $132 \overline{) 1716}$   
 $132 \overline{) 1748}$   
 $132 \overline{) 1780}$   
 $132 \overline{) 1812}$   
 $132 \overline{) 1844}$   
 $132 \overline{) 1876}$   
 $132 \overline{) 1908}$   
 $132 \overline{) 1940}$   
 $132 \overline{) 1972}$   
 $132 \overline{) 2004}$   
 $132 \overline{) 2036}$   
 $132 \overline{) 2068}$   
 $132 \overline{) 2100}$   
 $132 \overline{) 2132}$   
 $132 \overline{) 2164}$   
 $132 \overline{) 2196}$   
 $132 \overline{) 2228}$   
 $132 \overline{) 2260}$   
 $132 \overline{) 2292}$   
 $132 \overline{) 2324}$   
 $132 \overline{) 2356}$   
 $132 \overline{) 2388}$   
 $132 \overline{) 2420}$   
 $132 \overline{) 2452}$   
 $132 \overline{) 2484}$   
 $132 \overline{) 2516}$   
 $132 \overline{) 2548}$   
 $132 \overline{) 2580}$   
 $132 \overline{) 2612}$   
 $132 \overline{) 2644}$   
 $132 \overline{) 2676}$   
 $132 \overline{) 2708}$   
 $132 \overline{) 2740}$   
 $132 \overline{) 2772}$   
 $132 \overline{) 2804}$   
 $132 \overline{) 2836}$   
 $132 \overline{) 2868}$   
 $132 \overline{) 2900}$   
 $132 \overline{) 2932}$   
 $132 \overline{) 2964}$   
 $132 \overline{) 2996}$   
 $132 \overline{) 3028}$   
 $132 \overline{) 3060}$   
 $132 \overline{) 3092}$   
 $132 \overline{) 3124}$   
 $132 \overline{) 3156}$   
 $132 \overline{) 3188}$   
 $132 \overline{) 3220}$   
 $132 \overline{) 3252}$   
 $132 \overline{) 3284}$   
 $132 \overline{) 3316}$   
 $132 \overline{) 3348}$   
 $132 \overline{) 3380}$   
 $132 \overline{) 3412}$   
 $132 \overline{) 3444}$   
 $132 \overline{) 3476}$   
 $132 \overline{) 3508}$   
 $132 \overline{) 3540}$   
 $132 \overline{) 3572}$   
 $132 \overline{) 3604}$   
 $132 \overline{) 3636}$   
 $132 \overline{) 3668}$   
 $132 \overline{) 3700}$   
 $132 \overline{) 3732}$   
 $132 \overline{) 3764}$   
 $132 \overline{) 3796}$   
 $132 \overline{) 3828}$   
 $132 \overline{) 3860}$   
 $132 \overline{) 3892}$   
 $132 \overline{) 3924}$   
 $132 \overline{) 3956}$   
 $132 \overline{) 3988}$   
 $132 \overline{) 4020}$   
 $132 \overline{) 4052}$   
 $132 \overline{) 4084}$   
 $132 \overline{) 4116}$   
 $132 \overline{) 4148}$   
 $132 \overline{) 4180}$   
 $132 \overline{) 4212}$   
 $132 \overline{) 4244}$   
 $132 \overline{) 4276}$   
 $132 \overline{) 4308}$   
 $132 \overline{) 4340}$   
 $132 \overline{) 4372}$   
 $132 \overline{) 4404}$   
 $132 \overline{) 4436}$   
 $132 \overline{) 4468}$   
 $132 \overline{) 4500}$   
 $132 \overline{) 4532}$   
 $132 \overline{) 4564}$   
 $132 \overline{) 4596}$   
 $132 \overline{) 4628}$   
 $132 \overline{) 4660}$   
 $132 \overline{) 4692}$   
 $132 \overline{) 4724}$   
 $132 \overline{) 4756}$   
 $132 \overline{) 4788}$   
 $132 \overline{) 4820}$   
 $132 \overline{) 4852}$   
 $132 \overline{) 4884}$   
 $132 \overline{) 4916}$   
 $132 \overline{) 4948}$   
 $132 \overline{) 4980}$   
 $132 \overline{) 5012}$   
 $132 \overline{) 5044}$   
 $132 \overline{) 5076}$   
 $132 \overline{) 5108}$   
 $132 \overline{) 5140}$   
 $132 \overline{) 5172}$   
 $132 \overline{) 5204}$   
 $132 \overline{) 5236}$   
 $132 \overline{) 5268}$   
 $132 \overline{) 5300}$   
 $132 \overline{) 5332}$   
 $132 \overline{) 5364}$   
 $132 \overline{) 5396}$   
 $132 \overline{) 5428}$   
 $132 \overline{) 5460}$   
 $132 \overline{) 5492}$   
 $132 \overline{) 5524}$   
 $132 \overline{) 5556}$   
 $132 \overline{) 5588}$   
 $132 \overline{) 5620}$   
 $132 \overline{) 5652}$   
 $132 \overline{) 5684}$   
 $132 \overline{) 5716}$   
 $132 \overline{) 5748}$   
 $132 \overline{) 5780}$   
 $132 \overline{) 5812}$   
 $132 \overline{) 5844}$   
 $132 \overline{) 5876}$   
 $132 \overline{) 5908}$   
 $132 \overline{) 5940}$   
 $132 \overline{) 5972}$   
 $132 \overline{) 6004}$   
 $132 \overline{) 6036}$   
 $132 \overline{) 6068}$   
 $132 \overline{) 6100}$   
 $132 \overline{) 6132}$   
 $132 \overline{) 6164}$   
 $132 \overline{) 6196}$   
 $132 \overline{) 6228}$   
 $132 \overline{) 6$

ii) With 3 numbers

$$\begin{array}{r} 1 \\ 27 \overline{) 27} \\ \underline{18} \\ 9 \end{array} \quad \begin{array}{r} 2 \\ 18 \overline{) 18} \\ \underline{18} \\ 0 \end{array}$$

Short cut Method:

27, 18, 36  $\Rightarrow$  9

$$24142, 30 \Rightarrow 6$$

### Lesson 3

## Fractions

LCM  $\Rightarrow$  formula

for Numerator (find LCM)

for Denominator (find: HCP)

HCF  $\Rightarrow$  formulae

for Accelerator (find Hep)  
+ (find Len)

for Addition  
for Denominators (find LCM)

LCM

LCM

Numerators

2, 3, 6

$$\begin{array}{r} 2 \overline{) 2 \ 3 \ 6} \\ 3 \overline{) 2 \ 3 \ 6} \\ 1 \ 1 \ 1 \end{array}$$

HCF

D numerators

$$\begin{array}{r} 5 \ 15 \ 25 \\ \downarrow \ \downarrow \ \downarrow \\ 5 \ 5 \ 5 \\ \hline 1 \ 3 \ 1 \\ \hline 1 \end{array}$$

$$\underline{\underline{LCM}} = \frac{6}{5}$$

A = 5

HCF

$$\frac{2}{3} \quad \frac{3}{15} \quad \frac{6}{25}$$

$$\underline{\underline{LCM}} = \frac{15 \times 25}{75}$$

HCF

$$\begin{array}{r} 2 \quad 3 \quad 6 \\ \downarrow \quad \downarrow \quad \downarrow \\ 4 \quad 3 \quad 3 \\ \downarrow \quad \downarrow \quad \downarrow \\ 2 \quad 1 \quad 2 \\ \hline 1 \end{array}$$

$$= \frac{1}{75}$$

LCM

$$\frac{27}{50}, \frac{9}{20}, \frac{6}{25}$$

LCM (Num)

$$\begin{array}{r} 3 \overline{) 27 \ 9 \ 6} \\ 3 \overline{) 9 \ 3 \ 2} \\ 3 \overline{) 3 \ 1 \ 2} \\ 2 \overline{) 1 \ 1 \ 2} \\ \hline 1 \ 1 \ 1 \end{array}$$

HCF (Den)

$$\begin{array}{r} 50 \ 20 \ 25 \\ \downarrow \ \downarrow \ \downarrow \\ 10 \ 10 \ 5 \\ \downarrow \ \downarrow \ \downarrow \\ 2 \ 2 \ 1 \\ \hline 1 \end{array}$$

$$\frac{54}{180} \quad \frac{27}{70}$$

$$\frac{54}{5}$$

$$\underline{\underline{LCM}} = \frac{2}{3} \times \frac{4}{9} \times \frac{5}{6} \times \frac{7}{12}$$

LCM (Num)

$$\begin{array}{r} 2 \overline{) 2 \ 4 \ 5 \ 7} \\ 2 \overline{) 1 \ 2 \ 5 \ 7} \\ 5 \overline{) 1 \ 1 \ 5 \ 7} \\ 7 \overline{) 1 \ 1 \ 1 \ 7} \\ \hline 1 \ 1 \ 1 \end{array}$$

HCF (Den)

$$\begin{array}{r} 3 \ 9 \ 6 \ 12 \\ \downarrow \ \downarrow \ \downarrow \ \downarrow \\ 3 \ 3 \ 3 \ 3 \\ \downarrow \ \downarrow \ \downarrow \ \downarrow \\ 1 \ 1 \ 1 \ 1 \\ \hline 1 \end{array}$$

$$\frac{140}{1} = \frac{140}{3}$$

# Lesson 4 - decimal

Find LCM for 1.2, 1.5, 2 & 5?

First multiply by 10 for equal decimal values  
 $\times 10$  12 15 20 50

$$\begin{array}{r} 2 \overline{) 12 \ 15 \ 20 \ 50} \\ 5 \overline{) 6 \ 15 \ 10 \ 25} \\ 3 \overline{) 6 \ 3 \ 2 \ 5} \\ 5 \overline{) 2 \ 4 \ 2 \ 5} \\ 2 \overline{) 2 \ 1 \ 2 \ 1} \end{array}$$

So we have our answer  
 C.M. = 300  
 $\Rightarrow \frac{300}{10} = 30$

300 1 1 1 1

$$\begin{array}{r} 120 \times 100 \\ 000 \\ 000+ \\ 12000 \end{array}$$

Find LCM for 1.20, 0.24 & 60?

$\times 100$  12.  $\times 100$  24  $\times 100$  6000

$$\begin{array}{r} 12 \overline{) 120 \ 24 \ 6000} \\ 24 \overline{) 10 \ 2 \ 500} \\ 5 \overline{) 5 \ 1 \ 250} \\ 5 \overline{) 1 \ 1 \ 50} \\ 5 \overline{) 1 \ 1 \ 10} \\ 2 \overline{) 1 \ 1 \ 2} \\ 1 \ 1 \ 1 \end{array}$$

$$\begin{array}{r} 48 \times 125 \\ 1000 \\ 10000+ \\ 10000 \end{array}$$

$$\begin{array}{r} 25 \times 5 \\ 125 \\ 125 \times 48 \\ 1000 \\ 5000+ \\ 6000 \end{array}$$

$$\begin{array}{r} 1.20 \times 10 \\ 000 \\ 1200 \end{array}$$

$$\begin{array}{r} 1.20 \times 100 \\ 000 \\ 000+ \\ 12000 \end{array}$$

$$\begin{array}{r} 6000 \\ 100 \\ = 60 \end{array}$$

HCF for 6.16 & 13

$$\times 100 \quad 6.16 \times 100$$

$$\begin{array}{r} 616 \overline{) 1300} \\ 1232 \\ \hline 68 \\ 616 \\ \hline 64 \\ 616 \\ \hline 24 \end{array}$$

$$\frac{4}{100} = 0.04$$

Lesson 5:

Model 3:

Product of Numbers  $\otimes$  V topic

Ex:

$$12 \times 9 = 108 \quad 12 \times 9 = 108$$

Take LCM & HCF

$$\begin{array}{r} \text{LCM} \\ 3 \overline{) 12 \times 3} \\ 36 \end{array}$$

HCF

$$\begin{array}{r} 9 \overline{) 12} \\ 9 \\ \hline 3 \\ 3 \overline{) 9} \\ 9 \\ \hline 0 \end{array}$$

36 3

$$\begin{array}{r} 1 \\ 36 \times 3 \\ \hline 108 \end{array}$$

Here, Product of 2 no = HCF  $\times$  LCM



\* Example :-

1. LCM and HCF two no are 1260 & 83

If one of the number is 315.

product of two number = HCF  $\times$  LCM

$$x \times 315 = 1260 \times 83$$

$$x = \frac{1260 \times 83}{315}$$

The other no is 252

$$x = 252$$

H/W

product

The LCM of 2 numbers is 1820. HCF is 26

one no is 130 other no is?

LCM  $\times$  HCF = product of 2 numbers

$$1820 \times 26 = 130 \times N_2$$

$$N_2 = \frac{1820 \times 26}{130}$$

$$\frac{182}{130} \times 26$$

$$N_2 = 364$$

The LCM of two numbers is 14560 and HCF is

13 and one no is 416. The other is

$$14560 \times 13 = 416 \times N_2$$

$$2 \overline{) 7280}$$

$$2 \overline{) 470}$$

$$N_2 = \frac{14560 \times 13}{416}$$

$$2 \overline{) 14560}$$

$$= 455$$

Lesson - 6

Model 1

LCM - Same / different Remainder

Same Remainder:-

Ex

$$9 \overline{) 27}$$

$$8 \overline{) 16}$$

Diff Remainder:-

Ex

$$9 \overline{) 108}$$

$$9 \overline{) 252}$$

find the least number which when divided by 4, 9, & 12 will leave each case a remainder 3.

$$\begin{array}{r} 3 \\ 4 \overline{) \phantom{00} ?} \\ \underline{3} \phantom{00} \\ \phantom{00} \end{array} \quad \begin{array}{r} 3 \\ 9 \overline{) \phantom{00} ?} \\ \underline{9} \phantom{00} \\ \phantom{00} \end{array} \quad \begin{array}{r} 3 \\ 12 \overline{) \phantom{00} ?} \\ \underline{12} \phantom{00} \\ \phantom{00} \end{array}$$

Take  $\text{LCM}(4, 9, 12) = 36$

$$\begin{array}{r} 4 \overline{) 4, 9, 12} \\ 3 \overline{) 1, 9, 13} \\ 3 \overline{) 1, 13, 4} \\ 1 \quad 1 \quad 1 \end{array}$$

$$\begin{array}{r} 9 \\ 4 \overline{) 39} \\ \underline{36} \\ 3 \end{array} \quad \begin{array}{r} 4 \\ 9 \overline{) 39} \\ \underline{36} \\ 3 \end{array} \quad \begin{array}{r} 3 \\ 12 \overline{) 39} \\ \underline{36} \\ 3 \end{array}$$

Then add remainder with  $\text{LCM} = 36 + 3$   
 $= 39$

find the least number which is divided by 4, 6, 8, 12, 16 will leave each case a remainder 2

$$\begin{array}{r} 4 \overline{) \phantom{00} ?} \\ \underline{2} \phantom{00} \\ \phantom{00} \end{array} \quad \begin{array}{r} 6 \overline{) \phantom{00} ?} \\ \underline{2} \phantom{00} \\ \phantom{00} \end{array} \quad \begin{array}{r} 8 \overline{) \phantom{00} ?} \\ \underline{2} \phantom{00} \\ \phantom{00} \end{array} \quad \begin{array}{r} 12 \overline{) \phantom{00} ?} \\ \underline{2} \phantom{00} \\ \phantom{00} \end{array} \quad \begin{array}{r} 16 \overline{) \phantom{00} ?} \\ \underline{2} \phantom{00} \\ \phantom{00} \end{array}$$

$$\begin{array}{r} 4 \overline{) 4, 6, 8, 12, 16} \\ 2 \overline{) 1, 6, 2, 3, 4} \\ 2 \overline{) 1, 3, 1, 3, 2} \\ 3 \overline{) 1, 3, 1, 3} \\ 1 \quad 1 \quad 1 \quad 1 \end{array} \quad \begin{array}{r} 12 \\ 4 \overline{) 50} \\ \underline{48} \\ 2 \end{array} \quad \begin{array}{r} 8 \\ 8 \overline{) 50} \\ \underline{48} \\ 2 \end{array} \quad \begin{array}{r} 6 \\ 6 \overline{) 50} \\ \underline{48} \\ 2 \end{array} \quad \begin{array}{r} 12 \\ 12 \overline{) 50} \\ \underline{48} \\ 2 \end{array}$$

48 = 48 + 2  
 $= 50$



Model-5 (X) for lamp  
Railway owner

18/2/24

least 4 digit Number

- 99 - 2 digit no  
100 - 3 digit no  
999 - Highest 3 digit no  
1000 - 4 least digit no  
9999 - 4 highest digit no  
10000 - least 5 digit no  
99999 - highest 5 digit no

find the least number of four digit which is divisible by 4, 6, 8 & 10.

1. Take LCM for divisible value 4, 6, 8, 10.
2. Then take LCM value

use anyone method  
i) Short method  
ii) Table hand

Shortcut Method

2	4	6	8	10
3	3	3	4	15
4	1	1	4	5
5	1	1	1	5
	1	1	1	1

$120 \times 3 = 360$   
X not a factor

$120 \times 8 = 960$   
X not a factor

$120 \times 9 = 1080$  is a factor

Traditional Method

$$\begin{array}{r} 120 \overline{) 1000} \\ \underline{960} \\ 40 \end{array}$$

$1000 + (120 - 40) = 880$

Practice

1. find the least number of 4 digit divisible by 18, 24 & 32

$$\begin{array}{r} 2 \overline{) 182432} \\ 3 \overline{) 91216} \\ 4 \overline{) 3416} \\ 24 \overline{) 314} \\ 3 \overline{) 311} \end{array}$$

$$\begin{array}{r} 2 \overline{) 48 \times 3} \\ 144 \times 2 \\ \underline{288} \\ 24 \times 4 \\ 96 \times 3 \\ \underline{288} \end{array}$$

$$\begin{array}{r} 11 \overline{) 288 \times 2} \\ 22 \overline{) 288 \times 3} \\ 288 \times 4 \end{array}$$

don't a least

$$\begin{array}{r} 22 \overline{) 288 \times 3} \\ 844 \\ 1014 \\ 964 \\ \underline{288} \\ 864 \end{array}$$

least 4 digit no

$$\begin{array}{r} 33 \overline{) 288 \times 4} \\ 1152 \end{array}$$

10000

- ② find the least number of five digit which is divisible by 16, 18, 24 & 30.

$$\begin{array}{r} 2 \overline{) 16 \ 28 \ 24 \ 30} \\ 8 \ 1 \ 12 \ 15 \\ 8 \ 3 \ 4 \ 5 \\ 2 \ 3 \ 1 \ 15 \\ 1 \ 3 \ 1 \ 15 \\ 1 \ 1 \ 1 \ 5 \\ 1 \ 1 \ 1 \end{array}$$

$$\begin{array}{r} 1 \ 40 \times 2 \\ \hline 520 \end{array}$$

$$520$$

$$120 \times 8$$

$$360 \times 2$$

$$720$$

$$2 \times 3 \times$$

$$6 \times 7$$

$$24 \times 2$$

$$48 \times 2$$

$$96 \times 2$$

$$1920$$

$$\begin{array}{r} 720 \times 3 \\ \hline 2160 \end{array}$$

$$\begin{array}{r} 720 \times 8 \\ \hline 5760 \end{array}$$

$$\begin{array}{r} 720 \times 9 \\ \hline 6480 \end{array}$$

$$\begin{array}{r} 720 \times 15 \\ \hline 10800 \end{array}$$

→ ~~least~~ find digit no

$$\begin{array}{r} 720 \times 14 \\ \hline 10080 \end{array}$$

$$\begin{array}{r} 720 \times 14 \\ \hline 10080 \end{array} \rightarrow \text{least 5 digit no}$$

- ③ Find the smallest 4-digit no such that when divided by 12, 18, 21 and 28 it leaves remainder 3 in each case

$$\begin{array}{r} 3 \overline{) 12 \ 18 \ 21 \ 28} \\ 4 \ 6 \ 7 \ 28 \\ 7 \ 4 \ 6 \ 11 \ 4 \\ 9 \ 4 \ 16 \ 11 \ 4 \\ 12 \ 6 \ 11 \ 11 \end{array}$$

$$\begin{array}{r} 24 \times 21 \\ \hline 504 \end{array}$$

$$\begin{array}{r} 2 \overline{) 12 \ 18 \ 21 \ 28} \\ 6 \ 9 \ 21 \ 14 \\ 3 \ 9 \ 21 \ 7 \\ 1 \ 3 \ 7 \ 7 \\ 1 \ 1 \ 7 \ 7 \end{array}$$

$$216 \ 252$$

$$\begin{array}{r} 6 \times 9 \times 7 \\ \hline 378 \end{array}$$

$$\begin{array}{r} 4 \times 9 \times 4 \\ \hline 163 \times 4 \\ \hline 252 \end{array}$$

$$\begin{array}{r} 252 \times 2 \\ \hline 504 \end{array}$$

$$\begin{array}{r} 252 \times 4 \\ \hline 1008 \end{array}$$

$$\begin{array}{r} 252 \times 3 \\ \hline 756 \end{array}$$

$$\begin{array}{r} 252 \times 5 \\ \hline 1260 \end{array}$$

$$\begin{array}{r} 252 \times 6 \\ \hline 1512 \end{array}$$

$$\begin{array}{r} 252 \times 7 \\ \hline 1764 \end{array}$$

$$\begin{array}{r} 252 \times 8 \\ \hline 2016 \end{array}$$

$$\begin{array}{r} 252 \times 3 \\ \hline 756 \end{array}$$

$$\begin{array}{r} 252 \times 2 \\ \hline 504 \end{array}$$

$$1512$$

$$\begin{array}{r} 252 \times 10 \\ \hline 2520 \end{array}$$

$$\begin{array}{r} 252 \times 5 \\ \hline 1260 \end{array}$$

$$\begin{array}{r} 1008 \\ \hline 0756 \end{array}$$

$$\begin{array}{r} 0996 \\ \hline 0756 \end{array}$$

$$\begin{array}{r} 252 \times 4 \\ \hline 1008 \end{array}$$

least 4 digit  
leaves remainder 3  
+ add 3

$$1008 + 3 = 1011$$

Ans: 1011

# LCM and HCF

## MODEL-6

### Lesson-8

Greatest 4 digit number

Greatest 4 digit number - 9999

" " " " - 9999

Answer should be 99 with digit number.

Q1. Find the greatest 4-digit number divisible by 12, 15, 20, 35 and leave no remainder.

$$\begin{array}{r} 2 \overline{) 12, 15, 20, 35} \\ 2 \overline{) 6, 15, 10, 35} \\ 3 \overline{) 3, 15, 15, 35} \\ 5 \overline{) 1, 15, 15, 35} \\ 7 \overline{) 1, 1, 1, 1} \end{array}$$

$$\begin{array}{r} 2 \times 2 \times 3 \times 5 \times 7 \\ 4 \times 3 \\ \hline 12 \times 5 \\ \hline 60 \times 7 \\ \hline 420 \end{array}$$

$$\begin{array}{r} 420 \times 2 \\ \hline 840 \end{array}$$

$$\begin{array}{r} 420 \times 10 \\ \hline 4200 \end{array}$$

$$9660$$

$$\begin{array}{r} 420 \times 5 \\ \hline 2100 \end{array}$$

$$\begin{array}{r} 9660 \\ 420 \\ \hline 10080 \\ 420 \times 23 \\ \hline 1260 \\ 8400 \\ \hline 9660 \end{array}$$

$$\begin{array}{r} 420 \times 21 \\ \hline 420 \\ 8400 \\ \hline 8820 \end{array}$$

$$\begin{array}{r} 420 \times 20 \\ \hline 8400 \\ 420 \\ \hline 8820 \\ 420 \times 21 \\ \hline 8820 \end{array}$$

② Find the greatest 4-digit no which when divided by 15, 10, 20, leaves no remainder.

$$\begin{array}{r} 2 \overline{) 10, 15, 20} \\ 2 \overline{) 5, 15, 10} \\ 3 \overline{) 5, 15, 5} \\ 5 \overline{) 1, 5, 5} \end{array}$$

$$\underline{60}$$

$$\begin{array}{r} 60 \times 99 \\ \hline 5400 \\ 5940 \\ \hline 6530 \end{array}$$

$$\begin{array}{r} 111 \\ 60 \overline{) 166} \end{array}$$

$$\begin{array}{r} 9999 \\ 60 \overline{) 9999} \\ \hline 3999 \\ 3600 \\ \hline 399 \\ 360 \\ \hline 39 \end{array}$$

$$166 \times$$

$$\begin{array}{r} 60 \times 110 \\ \hline 6600 \end{array}$$

$$60 \times 17$$

$$\begin{array}{r} 60 \times 170 \\ \hline 10200 \end{array}$$

$$60 \times 250$$

$$\begin{array}{r} 9000 \\ 9000 \end{array}$$

$$\begin{array}{r} 60 \times 160 \\ \hline 9600 \end{array}$$

$$\begin{array}{r} 166 \times 60 \\ \hline 9960 \end{array}$$

$$9999 - 39$$

$$\underline{9960}$$

⑤ Find the greatest 5-digit no which divides 8, 14, 16 leaves 3 as remainder.

99999  $\rightarrow$  5 digit no

$$\begin{array}{r} 2 \overline{) 8, 9, 10} \\ 2 \overline{) 4, 9, 15} \\ 3 \overline{) 2, 9, 15} \\ 3 \overline{) 1, 3, 15} \\ 5 \overline{) 1, 15} \\ \hline 1, 1 \end{array}$$

$$2 \times 2 \times 2 \times 3 \times 3 \times 5$$

$$\begin{array}{r} 8 \overline{) 8, 1, 9, 10} \\ \hline 1, 1, 9, 10 \\ 72, 10 \end{array}$$

$$\begin{array}{r} 15 \times 3 \\ 5 \times 2 \\ 4 \times 90 \times 2 \\ 180 \times 2 \\ \hline 360 \end{array}$$

$$\begin{array}{r} 47 \overline{) 99999} \\ 72 \overline{) 840} \\ \hline 1599 \\ 1470 \\ \hline 1299 \\ 1260 \\ \hline 39 \end{array}$$

$$\begin{array}{r} 2 \overline{) 8, 9, 10} \\ 2 \overline{) 4, 9, 15} \\ 5 \overline{) 1, 9, 15} \\ 9 \overline{) 1, 9, 15} \\ \hline 1, 1 \end{array}$$

$$\begin{array}{r} 45 \times 2 \\ 90 \times 2 \\ \hline 180 \end{array}$$

$$\begin{array}{r} 2 \times 2 \\ 4 \times 2 \\ 8 \times 3 \end{array}$$

$$\begin{array}{r} 24 \times 3 \\ 72 \times 5 \\ \hline 360 \end{array}$$

$$\begin{array}{r} 99999 \\ 39 \\ \hline 99990 + 3 \\ \hline 99993 \end{array}$$

$$[8, 1, 9, 1, 10]$$

$$\begin{array}{r} 277 \\ 360 \overline{) 99999} \\ 720 \downarrow \\ \hline 2799 \\ 2520 \downarrow \\ \hline 02799 \\ 2520 \downarrow \\ \hline 279 \end{array}$$

$$99999 - 279$$

$$\begin{array}{r} 360 \times 7 \\ 4 \\ \hline 360 \times 8 \\ 2880 \end{array}$$

$$\begin{array}{r} 99999 \\ 279 \\ \hline 99920 + 3 \end{array}$$

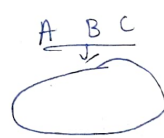
$$99923$$

Lesson-9

Model-7

(Applications Questions)

① A, B, C start jogging around a circular field and complete a single round in 18 sec, 22 sec, 30 sec respectively. In how much time will they all meet at start point?



A - 18 Sec  
B - 22 Sec  
C - 30 Sec

18 22 30  
: 24 60  
36 80 90  
54 60 100  
100

L.H.C

$$\begin{array}{r} 2 \overline{) 18, 22, 30} \\ 3 \overline{) 9, 11, 15} \\ 3 \overline{) 3, 11, 15} \\ 5 \overline{) 1, 11, 15} \\ \hline 1, 1, 1 \end{array}$$

$$\begin{array}{r} 2 \times 3 = 6 \\ 6 \times 3 = 18 \\ 18 \times 5 = 90 \\ 90 \times 11 = 990 \end{array}$$

$$= 990 \text{ Sec.}$$



- ② Three friends A, B, C start running on circular ground in 24 seconds, 36 seconds, 30 seconds respectively, after how many minutes will they meet again at starting point?

$$\begin{array}{r}
 3 \overline{) 24 \ 36 \ 30} \\
 \underline{8 \ 12 \ 10} \\
 2 \overline{) 8 \ 12 \ 10} \\
 \underline{4 \ 12 \ 15} \\
 2 \overline{) 4 \ 12 \ 15} \\
 \underline{2 \ 1 \ 15} \\
 2 \overline{) 2 \ 1 \ 15} \\
 \underline{1 \ 1 \ 1}
 \end{array}
 \quad
 \begin{array}{r}
 2 \times 2 \\
 \hline
 4
 \end{array}
 \quad
 \begin{array}{r}
 6 \\
 36 \times \\
 \hline
 60
 \end{array}
 \cdot 6 \text{ minutes}$$

$$\begin{array}{r}
 4 \times 2 \\
 \hline
 8 \times 5
 \end{array}
 \quad
 \begin{array}{r}
 1 \text{ min} - 60 \text{ sec} \\
 6 \text{ min} - 360 \text{ sec}
 \end{array}$$

$$\begin{array}{r}
 40 \times 9 \\
 \hline
 360 \text{ sec}
 \end{array}$$

- ③ The traffic lights at three different road crossing change after 24 sec, 36 sec, 54 sec respectively, if they all change simultaneously at 10:15:00 AM, then what time they again change simultaneously?

$$\begin{array}{r}
 2 \overline{) 24 \ 36 \ 54} \\
 \underline{12 \ 18 \ 27} \\
 2 \overline{) 12 \ 18 \ 27} \\
 \underline{6 \ 9 \ 13.5} \\
 2 \overline{) 6 \ 9 \ 13.5} \\
 \underline{3 \ 4.5 \ 6.75} \\
 2 \overline{) 3 \ 4.5 \ 6.75} \\
 \underline{1.5 \ 2.25 \ 3.375} \\
 2 \overline{) 1.5 \ 2.25 \ 3.375} \\
 \underline{0.75 \ 1.125 \ 1.6875}
 \end{array}
 \quad
 \begin{array}{r}
 2 \times 2 \times 2 \\
 \hline
 8
 \end{array}
 \quad
 \begin{array}{r}
 3 \times 3 \times 3 \\
 \hline
 27
 \end{array}$$

$$\begin{array}{r}
 5 \\
 27 \times 8 \\
 \hline
 216 \text{ sec}
 \end{array}
 \quad
 \begin{array}{r}
 216 \\
 60 \overline{) 216} \\
 \underline{3 \ 60} \\
 180 \\
 \underline{36}
 \end{array}$$

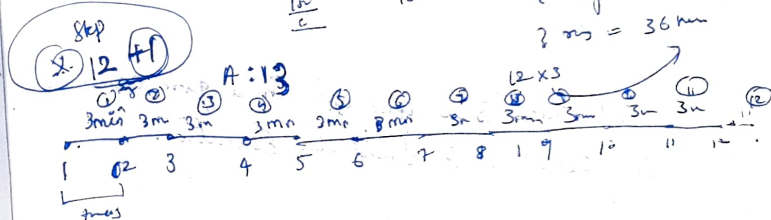
$$\begin{array}{r}
 60 \text{ sec} = 1 \text{ min} \\
 216 \text{ sec} = 3 \text{ min } 36 \text{ sec}
 \end{array}$$

Now the three signal at 10:15:00 AM  
 after 3 min 36 sec  $\rightarrow$  10:18:36 AM.  
 The next three  
 signal.

4. There are 3 bells which start ringing 3, 6, 9, 12, 15 seconds respectively. In 36 minutes how many times will the bells ring simultaneously?

$$\begin{array}{r}
 3 \overline{) 3 \ 6 \ 9 \ 12 \ 15} \\
 \underline{1 \ 2 \ 3 \ 4 \ 5} \\
 18 \overline{) 2 \ 1 \ 2 \ 1 \ 4 \ 5} \\
 \underline{1 \ 1 \ 1 \ 2 \ 5} \\
 18 \overline{) 1 \ 1 \ 1 \ 1 \ 5} \\
 \underline{1 \ 1 \ 1 \ 1}
 \end{array}
 \quad
 \begin{array}{r}
 2 \times 2 = 4 \\
 3 \times 3 = 9 \\
 5 \times 1 = 5
 \end{array}
 \quad
 \begin{array}{r}
 5 \times 9 \times 4 \\
 \underline{2 \ 5 \times 4} \\
 180
 \end{array}$$

$$\begin{array}{r}
 180 \text{ sec} \\
 3 \overline{) 180} \\
 \underline{60} \\
 120 \\
 \underline{60} \\
 60
 \end{array}
 \quad
 \begin{array}{r}
 3 \\
 60 \overline{) 180} \\
 \underline{30} \\
 150 \\
 \underline{30} \\
 120 \\
 \underline{30} \\
 90 \\
 \underline{30} \\
 60 \\
 \underline{30} \\
 30 \\
 \underline{30} \\
 0
 \end{array}$$



5. Three pieces of timber 42 m, 49 m, 63 m long have to be divided into planks of same length. What is the greatest possible length of each plank?

$$\begin{array}{r}
 42 \ 49 \ 63 \\
 \downarrow \downarrow \downarrow \\
 7 \ 7 \ 9 \\
 \downarrow \downarrow \downarrow \\
 6 \ 1 \ 3 \\
 \downarrow \downarrow \downarrow \\
 3 \ 1 \ 1 \\
 \downarrow \downarrow \downarrow \\
 1 \ 1 \ 1
 \end{array}$$

$$\begin{array}{r}
 14 \times 5 \\
 \hline
 70
 \end{array}$$

(Lowest, largest, Highest)  
 HCF

$$\begin{array}{r}
 4 \rightarrow A: 7 \text{ m}
 \end{array}$$