Chandru Maths

LCM & HCF

NUMBER SYSTEM

Chandru Maths

LCM - Least common multiple - பி.பொ.ம

12 - 12, 24, 36, 48, 60, 72, 84, 96, 108 . . . .

16 - 16, 32, 48, 64, 80, 96, 112 . . . .

LCM - 48

12, 16 = 4(3, 4)

= 4 × 3 × 4 = 48

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LCM

2, 3, 5, 7, 11, 13

2	12, 16 ✓
2	6, 8
2	3, 4
2	3, 2
3	3, 1
	1, 1

$2^4 \times 3 = 16 \times 3 = 48$ – LCM

12 , 16

$2^2 \times 3$, 24

LCM $= 2^4 \times 3 = 48$

$\frac{16}{12}$ $\frac{32}{12}$, $\frac{48}{12}$

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2	16, 18, 24
2	8, 9, 12
2	4, 9, 6
2	2, 9, 3
3	1, 9, 3
3	1, 3, 1
	1, 1, 1

16
18
24 } 144

LCM: $2^4 \times 3^2 = 16 \times 9 = 144$

16 , 18, 24

$16 = 2^4$

$18 = 2^1, 3^2$

$24 = 2^3, 3^1$

$LCM = 2^4 \times 3^2$

$= 144$

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HCF - Highest Common Factor - மீ.பெ.வ.அ

12 - 12, 6, 4, 3, 2, 1.

16 - 16, 8, 4, 2, 1.

HCF - 4

2	12
2	6
3	3
	1

2	16
2	8
2	4
2	2
	1

$12 \rightarrow 2^2 \times 3$

$16 \rightarrow 2^4$

$HCF = 2^2 = 4$

12, 16

4

2

1

$12, 16 \rightarrow 4$

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12, 16

HCF - 4

$$
\begin{array}{r|l}
12 & 16 \; (1 \\
 & 12 \\
\hline
 & 4 \; \big) \; 12 \; (3 \\
 & \quad\;\; 12 \\
\hline
 & \quad\;\; 0
\end{array}
$$

HCF

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72, 99 - HCF

72 , 99

$2^3 \times 3^2$ $\quad$ 3×11

HCF : $3^2 = 9$

72, 99

27 $\quad$ HCF = 9

9

3

72)99(1
72
27)72(2
54
18)27(1
18
9)18(2
18
0

$\boxed{\text{HCF} = 9}$

Chandru Maths

What is the Least Common Multiple of all even numbers between 5 and 13?

1. 120 ✓
2. 90 ✗
3. 180 ✗
4. 60 ✗

6, 8, 10, 12

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

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

$= 120$ ✓

6, 8, 10, 12

2×3, 2^3, 2×5, $2^2 \times 3$

$2^3 \times 3 \times 5 = 120$ ✓

Chandru Maths

If the Least Common Multiple of 56, 57 and 58 is K, then what will be the Least Common Multiple of 56, 57, 58 and 59?

1. 177 K
2. 59 K
3. 56 K
4. 57 K

56
57 → K
58

LCM

56
57
58
59

LCM

59 k

6, 4, 2 → $3 \times 2^2 = 12 \times 11$

3×2 2^2 2

$\overline{177}$ k

59

Chandru Maths

What is the Highest Common Factor of 42, 168 and 210?

1. 14
2. 21
3. 42
4. 7

210 - 168

42

21

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What is the HCF of $2^3 \times 3^4$ and $2^5 \times 3^2$?

$2^3 \times 3^2$

1. $2^5 \times 3^3$
2. $2^3 \times 3^4$
3. $2^3 \times 3^2$
4. $2^5 \times 3^4$

amix

Chandru Maths

Co Prime No's

19, 30

4, 5 5, 6 20, 11 (9, 20)

1

4 → 4, 2, 1 5 → 5, 1

5 → 5, 1 6 → 6, 3, 2, 1

HCF of coprime No's = 1 ✓

LCM " " " = $N_1 \times N_2$ ✓

Chandru Maths

If Least Common Multiple of 23 and 24 is A and Highest Common Factor of 23 and 24 is B, then what is the value of A + B?

1. 451
2. 551
3. 553
4. 452

$N_1 = 23$ $N_2 = 24$ - co prime

LCM - A

HCF - B

A+B = ?

LCM = $N_1 \times N_2$ = $23 \times 24 = 552 = A$

HCF = 1 = B

A+B = 552+1 = 553

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N_1, N_2

$N_1 \times N_2 = LCM \times HCF$ ✓

Chandru Maths

The HCF and LCM of two numbers are 16 and 160 respectively. If first number is 32, then the second number is

$N_1 = 32$, $N_2 = ?$

(A) 48

(B) 80 ✓

(C) 96

(D) 112

$N_1 \times N_2 = HCF \times LCM$

$\cancel{32}^{2} \times N_2 = 16 \times \cancel{160}^{80}$

$N_2 = 80$

Chandru Maths

Find the ratio of LCM and HCF of 28 and 42.

(A) 6 : 1 ✓

(B) 2 : 3

(C) 3 : 2

(D) 7 : 2

28 42

7×4 7×6

7×2^2 $7\times3\times2$

LCM: $7\times3\times2^2$

HCF: 7×2

LCM: HCF

$\cancel{7}\times3\times2^{\cancel{2}} : \cancel{7}\times\cancel{2}$

6 : 1

Chandru Maths

The LCM and HCF of two numbers are 3456 and 48 respectively. If first no is 432 then find the 2nd number.

(A) 384

(B) 192

(C) 108

(D) 96

$N_1 \times N_2 = LCM \times HCF$

384

$432 \times N_2 = 3456 \times 48$

108

$N_2 = 384$

Chandru Maths

The HCF and LCM of two numbers are 30 and 2310 respectively. If first number is 330, the 2nd number is

(A) 231

(B) 210 ✓

(C) 200

(D) 250

N_1

$N_1 \times N_2 = HCF \times LCM$

$\cancel{330} \times N_2 = \cancel{30} \times \cancel{2310}$ 210

$N_2 = 210$

Chandru Maths

The HCF and LCM of two numbers are 24 and 5304 respectively. If first number is 408, then first number exceeds the 2nd number by

(A) 88

(B) 96 ✓

(C) 102

(D) 312

$\cancel{102}$ 17

$\cancel{408} \times N_2 = \cancel{24}\,8 \times \cancel{5304}\,312$

$N_2 = 312$

408
312
96

Chandru Maths

LCM & HCF of Fractions

$2/3, 4/5, 6/8$

$$LCM = \frac{\text{LCM of numerators}}{\text{HCF of Denominators}}$$

$$HCF = \frac{\text{HCF of Numerators}}{\text{LCM of Denominators}}$$

Chandru Maths

H.C.F.of $\frac{2}{3}, \frac{4}{5}$ and $\frac{6}{7}$ is ?

(A) $\frac{48}{105}$

(B) $\frac{2}{105}$

(C) $\frac{1}{105}$

(D) $\frac{24}{105}$

$= \frac{HCF}{LCM}$

2, 4, 6

HCF = 2

2 4 6

1 1 1

2 2^2 2×3

2

$\frac{2}{105}$

acaden

Chandru Maths

LCM of $\frac{2}{3}, \frac{4}{9}$ and $\frac{5}{6}$ is-

(A) $\frac{8}{27}$ ✗

(B) $\frac{20}{3}$ ✓

(C) $\frac{10}{3}$

(D) $\frac{20}{70}$ ✗

$\frac{\text{LCM}}{\text{HCF}}$

LCM: $\frac{\text{LCM of } (2, 4, 5)}{\text{HCF of } (3, 9, 6)} = \frac{20}{3}$

2	4	5
1	1	1
2	2^2	5

$2^2 \times 5 = 4 \times 5 = 20$

Chandru Maths

Find the H.C.F. of reciprocal of $\frac{3}{4}, \frac{9}{10}, \frac{15}{16}$?

(A) $\frac{3}{15}$

(B) $\frac{3}{80}$

(C) $\frac{1}{15}$

(D) $\frac{2}{45}$

தலைகீழி

4/3, 10/9, 16/15

$$HCF = \frac{HCF \text{ of } (4, 10, 16)}{LCM \text{ of } (3, 9, 15)} = \frac{2}{45}$$

4, 10, 16

6

3

2

30

45

9

5

3 9 15

1 1 1

3 3^2 3×5

$3^2 \times 5 = 45$

Chandru Maths

The HCF of 8^{-7}, 8^{-63}, 8^{-60}, 8^{-3} is

(A) 8^{-6}

(B) 8^{-3}

(C) 8^{-7}

(D) 8^{-63} ✓

$8^{-7} = 1/8^{7}$ $\quad 1/8^{63}$ $\quad 1/8^{60}$ $\quad 1/8^{3}$

$$HCF = \frac{1}{8^{63}} = 8^{-63}$$

Chandru Maths

The HCF of 5^{-13}, 5^{-20}, 5^{-8} and 5^{-30} is

(A) 5^{-30}

(B) 5^{-20}

(C) 5^{-8}

(D) 5^{-13}

$1/5^{13}$

$\frac{1}{5^{30}}$

5^{-30}

Chandru Maths

The LCM of 0.04, 0.16 and 2.4 is

(A) 4.8

(B) 2.4

(C) 0.24

(D) 3.6

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

$\frac{4}{100}$ $\frac{16}{100}$ $\frac{24}{10}$

4 16 24

2^2 2^4 $2^3 \times 3$

2	4, 16, 24
2	2, 8, 12
2	1, 4, 6
2	1, 2, 3
3	

$LCM = \frac{LCM \text{ of } (4, 16, 24)}{HCF \text{ of } (10^2, 10^2, 10)} = \frac{2^4 \times 3}{10}$

$4.8 = \frac{48}{10} = \frac{16 \times 3}{10}$

Chandru Maths

The LCM of $(2^4 \times 3^6 \times 5^3)$, $(3^8 \times 5^9 \times 7^5)$, $(2^{10} \times 3^5 \times 11^4)$

$(2^4 \times 3^6 \times 5^3)$, $(3^8 \times 5^9 \times 7^5)$, $(2^{10} \times 3^5 \times 11^4)$ का ल.स.प. क्या होगा ?

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

(B) $(2^3 \times 3^4 \times 5^4)$

(C) $(2^{10} \times 3^8 \times 5^9 \times 7^5 \times 11^4)$ ✓

(D) $(2^8 \times 3^9 \times 7^5 \times 11^4)$

LCM = $2^{10} \times 3^8 \times 5^9 \times 7^5 \times 11^4$

Chandru Maths

The HCF of is $\frac{4}{15}$, $\frac{6}{25}$ and $\frac{16}{25}$

(A) $\frac{2}{75}$

(B) $\frac{16}{5}$

(C) $\frac{6}{25}$

(D) None of these

$\frac{2}{75}$

Chandru Maths

The LCM of $\frac{1}{3}, \frac{2}{9}, \frac{5}{6}$ and $\frac{4}{27}$ is - $\frac{20}{3}$

$\frac{1}{3}, \frac{2}{9}, \frac{5}{6}, \frac{4}{27}$ का ल.स.प. क्या है ?

(A) $\frac{1}{54}$

(B) $\frac{10}{27}$

(C) $\frac{20}{3}$

(D) None of these

Academy Plus : P

Chandru Maths

What is the greatest number which can exactly divide 192, 1056 and 1584?

1. 48 — 6×8
2. ~~56~~ — 8×7
3. ~~44~~ — 11×4
4. ~~36~~ — 9×4

2
192
7

R 3

24
192
8

~~56~~
8

73
~~584~~
8

Chandru Maths

What is the highest number which when divides the numbers 1026, 2052 and 4102, leave remainders 2, 4 and 6 respectively.

1. 512
2. 1024
3. 128
4. 256

1026 − 2 = 1024
2052 − 4 = 2048
4102 − 6 = 4096

HCF - 1024

Chandru Maths

What is the largest two digit number which when divided by 6 and 5 leaves remainder 1 in each case?

1. 61 - 7 1/3 (1)
2. 93
3. 91 - 10 1/3 (1)
4. 97

6

2 × 3

Chandru Maths

What is the least number of four digits which is exactly divisible by 2, 4, 6 and 8?

3×2

1. ~~1016~~
2. ~~1024~~
3. 1008 - 9/3
4. ~~1096~~ 7.

Chandru Maths

What is the smallest number which when increased by 5 is divisible by 12, 18 and 30?

1. 175 +5 – ✓

2. ~~115 +5~~ – 3

3. ~~235 +5~~ – 6

4. ~~195 +5~~ – 2

x+5

180

9×2

.com

Chandru Maths

The product of two numbers is 6845, if the HCF of the number is 37, then the greater number is:

1. 111
2. 37
3. 148
4. 185 ✓

$N_1 = 37a$ $N_2 = 37b$

$37a \times 37b = 6845$

$ab = 5$

$(1, 5)$

$N_2 = 37 \times 5 = 185$

$$\begin{array}{r} 37 \\ \times\ 8 \\ \hline 296 \end{array}$$

$$\begin{array}{r} 185 \\ 37\overline{)6845} \\ 37 \\ \hline 314 \\ 296 \\ \hline 185 \\ 185 \\ \hline \end{array}$$

Chandru Maths

If LCM of two numbers 390 and 420 is 5460, then the HCF of two numbers is:

1. 35
2. 45
3. 30
4. 42

$N_1 \times N_2 = LCM \times HCF$

$390 \times 420 = 5460 \times HCF$

$13 \quad 182$

14

$HCF = 30$

Chandru Maths

If $x \times y$ denotes H.C.F of x and y and x @ y denotes LCM of x and y, then the value of (72×84) @ 144 is:

1. 144 ✓
2. 504
3. 210
4. 420

$72 \times 84 = \text{HCF of}(72, 84)$

$12 @ 144$

$12 @ 144 = \text{LCM of } (12, 144)$

$72 \quad 84$

$9 \times 8 \quad 4 \times 21$

$3^2 \times 2^3 \quad 2^2 \times 7 \times 3$

$\text{HCF} = 2^2 \times 3 = 12$

$12, 144$

$\text{LCM} = 144$

Chandru Maths

Let x be the smallest number greater than 600 which gives the remainders 2, 3 and 4, when divided by 5, 6 and 7, respectively. The sum of digits of x is:

1. 14
2. 15
3. 13
4. 16

$5 \times 6 \times 7$

210

630

627 16

Chandru Maths

Let x be the greatest number which when divides 6475, 4984 and 4132, the remainder in each case is the same. What is the sum of digits of x?

1. 4
2. 7
3. 5
4. 6

1491 852

491 420

213 213

com

Chandru Maths

The largest three digit number that is exactly divisible by 6, 7 and 8 is:

1. 999
2. 168
3. 358
4. 840

24

168

1,120

840

3×2

3/5

Chandru Maths

What is the largest two digit number which when divided by 6 and 7 gives remainder 3 and 4 respectively?

1. 81 ✓
2. ~~94~~ ✗
3. ~~83~~ ✗ ②
4. ~~84~~ ✗

6 → 3 3

7 → 4 3

42 x 2 = 84 -3

6 → 3 3/2 ①

3 x 2

3

3/3 ⓪

Chandru Maths

If A is the smallest three digit number divisible by both 6 and 7 and B is the largest four digit number divisible by both 6 and 7, then what is the value of B – A?

1. 9912
2. 9870 ✓
3. 9996
4. 9954

Smallest 3 digit NO : 100

6, 7. LCM = 42 × 3 = 126 = A

Largest 4 digit NO = 9999

42) 9999 (238
84
159
126
339
336
3 – R

42) 100 (2
84
16 + 26 = 42

9999 – 3

B = 9996

42
16 – 126 (100 + 26)
26

B – A = 9996 – 126 = 9870

Chandru Maths

A fraction is such that the numerator is five less than the denominator. Also four times the numerator is one more than the denominator. The fraction is:

1. $\frac{4}{7}$ 13

2. $\frac{3}{8}$ 15 12

3. $\frac{7}{12}$ 15 28

4. $\frac{2}{7}$ 1 15 8

$\frac{x - nu}{y - de}$

n	d
$x-5$	x

$4(x-5) - x = 1$

$4x - 20 - x = 1$

$3x = 1 + 20 = 21$

$x = 7$

n	d
2	7

$\frac{n}{d} = \frac{2}{7}$

Chandru Maths

In an office, there are 216 tables and 264 chairs. If $\frac{1}{6}$ of the tables and $\frac{1}{4}$ of the chairs are broken then how many people can work in the office if each person requires one table and one chair?

1. 180 ✓
2. 186 ✗
3. 100 ✗
4. 198 ✗

$T = \overset{36}{\cancel{216}} \times \frac{1}{\cancel{6}}$ $\quad$ $C = \overset{66}{\cancel{264}} \times \frac{1}{\cancel{4}}$

$T = 216 - 36 = 180$ $\quad$ $C = 264 - 66 = 198$

180 $\quad$ 198

180 $\quad$ 180

Chandru Maths

X and Y together have ₹1300. If ₹10 less than three-fifth of the amount of X is equal to half of the amount of Y, then how much does X have?

1. ₹700
2. ₹600
3. ₹550
4. ₹650

X Y

Rs - x y

$x + y = 1300$

$\times 5$

$x \times 3/5 - 10 = y/2$

$\frac{3x - 50}{5} = y/2$

$6x - 100 = 5y$

$6x - 5y = 100$

$5x + 5y = 6500$

$11x = 6600$

$11x = 6600$

$x = 600$

Chandru Maths

A temple has five bells which ring at the intervals of 12, 15, 16, 20 and 25 minutes respectively. If they ring together at midnight, then at what time next will they ring together?

1. 8:00 P.M. ✓
2. 7:00 P.M.
3. 7:30 P.M.
4. 8:30 P.M.

12:00

$12 - 2^2 \times 3$

$15 - 5 \times 3$

$16 - 2^4$

$20 - 5 \times 2^2$

$25 - 5^2$

LCM: $2^4 \times 5^2 \times 3$

$= 16 \times 25 \times 3$ min

$= \frac{16 \times 25 \times 3}{60}$ hr

$= 20$ hr

$12 + 20$

$12 + 12 + 8$

8 pm

Chandru Maths

What is the least number of square tiles required to pave the floor of a room 15m 17cm long and 9m 43cm broad?

1. 851 ✓
2. 841 ✗
3. ~~840~~ ✗
4. ~~830~~ ✗

$n = \frac{l \times b}{a^2}$

a = HCF of (l, b)

$a = 41$

$n = \frac{1517 \times 943}{41 \times 41}$

943) 1517 (1
943
574) 943 (1
574
369) 574 (1
369
205) 369 (1
205
164) 205 (1
164
41) 164 (4
164
0

41) 1517 (37
123
287
287
0

37
23
111
74
851

Chandru Maths

Divisibility rule

0 2 4 6 8

abcD ÷ 2 — 78432152 — $\frac{2}{2}$ 1

78432155

5/2 = 2 (1)

abcD ÷ a · 2^2

abcD ÷ 8 — 2^3 — 78432886 — $\frac{886}{8}$ — $\frac{880}{8}$ — 110 — 11 — (6)

abcD ÷ 3 — $\frac{a+b+c+D}{3}$ — 4672 - 1 — $\frac{18}{3}$ (1) — $\frac{4671}{3}$ — $\frac{18}{3}$ (6) — 6/3

abcD ÷ 9 — $\frac{a+b+c+d}{9}$ — $\frac{4671}{9}$ — 18/9 — 9/9

Chandru Maths

$x \quad y$

1) $N_1 = H \times a$

$N_2 = H \times b$

H - HCF

(a, b) - coprime

2) $N_1 \times N_2 = LCM \times HCF$

$LCM = H \times a \times b$

3) $LCM > HCF$

4) $N_1 : N_2 = a : b$

5) $N_1 = Ha$, $N_2 = Hb$, $N_3 = Hc$

$LCM = H \times a \times b \times c$

Chandru Maths

The least number, which when divided by 8, 9, 12 and 15 leaves 1 as a remainder in each case is ?

$13+5$

(A) 179

(B) 181

(C) 359

(D) 361

8	9	12	15
2^3	3^2	$2^2 \times 3$	3×5

LCM: $2^3 \times 3^2 \times 5 = 8 \times 9 \times 5$

$= 360 + 1$

$= 361$

Chandru Maths

$N_1 = 12 = 2^2 \times 3$

$N_2 = 20 = 2^2 \times 5$

$HCF = 2^2 = H$

$N_1 = H \times 3$

$N_2 = H \times 5$

$\boxed{\begin{array}{l} N_1 = H \times a \\ N_2 = H \times b \end{array}}$

$N_1 : N_2 = \cancel{H} \times a : \cancel{H} \times b$

$\boxed{N_1 : N_2 = a : b}$

$N_1 = Ha$

$N_2 = Hb$

$N_1 \times N_2 = LCM \times HCF$

$H \times a \times \cancel{H} \times b = LCM \times \cancel{H}$

$\boxed{LCM = H \times a \times b}$

Chandru Maths

abcd ÷ 5 Last digit - 0, 5 $\frac{78342}{5}$ 2 → 2

abcd ÷ 25 5^2 $\frac{78342}{25}$ 2

abcd ÷125 5^3

abcd ÷10 Last digit - 0 $\frac{78342}{10}$ → 5

abcd ÷6 6

3×2

Chandru Maths

Find the least number, which when increased by 7 is divisible by 3, 7, 28 and 15.

(A) 420 +7 427

(B) 427 +7 434

(C) 413 +7 3/5

(D) 127 +7

Chandru Maths

Divisibility rule

$\div 2 \rightarrow$ Last digit must be $\div$ by 2

$\div 4 \rightarrow$ Last 2 " " " $\div$ by 4

$\div 8 \rightarrow$ " 3 " " " $\div$ by 8

$\div 5 \rightarrow$ " one " " " $\div$ by 5

$\div 25 \rightarrow$ " 2 " " " $\div$ by 25

$\div 3 \rightarrow$ Sum of digits must be $\div$ by 3

$\div 9 \rightarrow$ " " " $\div$ by 9

$\div 6 \rightarrow$ 2, 3

$\div 10 \rightarrow$ Last digit - 0

Chandru Maths

Find the least perfect square which is completely divisible by 8, 9 and 12.

(A) 72 ×

(B) 144 ✓ 12^2

(C) 288 ×

(D) 36 × 6^2

8	9	12	LCM
2^3	3^2	$2^2 \times 3$	

LCM = $2^3 \times 3^2$ = 8×9 = 72 × 2 = 144

Chandru Maths

A number 'x' is added to 2000. The resultant sum is completely divisible by 12,16,18 & 21. Find the sum of digits of 'x' ?

(A) 7

(B) 5

(C) 6

(D) 4

① $2000+x$

9×2

$\frac{2+7+x}{9}$ $\quad 9/9$

12	16	18	21
$2^2\times3$	2^4	$3^2\times2$	7×3

② LCM: $2^4\times3^2\times7$

$=16\times9\times7$

$=16\times63$

LCM $=1008$

$63\times16=378$, 63, 1008

$1008\times2=2016$

$=2000+16$

$1+6=7$

③ $1008\overline{)2000}(1$, 1008, 992

$1008-992=16$

$2000+16=2016$

Chandru Maths

Find out the smallest number of five digits which is completely divisible by 12, 15 and 18 respectively.

4×3 5×3 9×2

(A) ~~10010~~ – 2

(B) ~~10015~~

(C) ~~10020~~

(D) 10080 ✓ 9/4

18 → 36/9

9×2

Chandru Maths

Let N is the least number of 6 digits, which when divide by 4, 6, 10 and 15 leaves the remainder 2 in each case. Find the sum of digits in N.

(A) 3

(B) 5

(C) 4

(D) 6

Chandru Maths

The least number of 5-digits which is divisible by 45, 60, 75 and 120 when it is added to 119 ?

(A) ~~10800~~ +119

(B) 10681 +119 = 10800 ✓

(C) 10321 +119 ~~= 10440~~

(D) ~~10941 +119~~

120

15×8

10000

x+119

55

~~440~~

8

75

25×3

40

25

9×5

Chandru Maths

Find out the least number, which, when divided by 15, 24, 32 and 45 leaves the remainders 8, 17, 25 and 38 respectively.

(A) 1440

(B) 1450

(C) 1433

(D) 1500

R

15 8 - 7 15 → $\frac{8}{5} = 3$ R

24 17 - 7 5×3

32 25 -7 5

45 38 -7

LCM -7

Chandru Maths

Find the largest 3 digit number given remainder 1 and 5, when divided by 5 & 8

(A) ~~996~~

(B) ~~991~~

(C) 981 ✓

(D) ~~986~~

R

÷ 5 1

③ ÷ 8 5

124 ~~996~~ R 4 / 8

122 21 ~~981~~ / 8 R 5

31

12 ~~991~~ / 8 R 7

123 ~~986~~ / 8 R 2

Chandru Maths

The highest four-digit number which is divisible by each of the numbers 16, 36, 45, 48, is ?

(A) ~~9180~~

(B) 9360

(C) ~~9630~~

(D) ~~9840~~

4 9×4 9×5 6×8

2
~~180~~
~~8~~

45
~~360~~
~~8~~

Chandru Maths

Find the largest number of four digit which is divisible by 10, 15 and 20 ?

3×5 4×5

(A) ~~9990~~

(B) 9960 ✓

(C) ~~9980~~

(D) ~~9995~~

10, 15, 20 – LCM

2×5 3×5 $2^2\times5$

LCM: $2^2\times5\times3$

$= 60$

$60\overline{)9999}(166$

60

399

360

399

360

39

$9999-39$

$= 9960$ ✓

Chandru Maths

Find the largest four digit number which is divisible by 12, 15, 18 and 27 ?

9×2 9×3

(A) ~~9690~~

(B) 9720

(C) ~~9980~~

(D) ~~9960~~

Chandru Maths

Which is the smallest number, which on dividing by 18, 24, 30 and 42 leaves remainder as 1?

(A) 2510

(B) 2512

(C) 2521

(D) 2601

Chandru Maths

Find the smallest number which when divided by 2, 3, 4, 5 & 6 leaves remainder as 1 in each case & 0 when divided by 7 ?

(A) 121

(B) 301

(C) 403

(D) 202

$\frac{84}{7}$ 2

6 / 2 3

4 3

$\frac{301}{7}$

$4\frac{1}{3}$

Chandru Maths

Find the three digit number which leave remainder as one being divided by 2, 5, 9 & 11 in each case ?

(A) 991

(B) 997

(C) 981

(D) 983

7/5 ②

Chandru Maths

$\div 7$ 15 60 25 R. 3

$21 - 4 = 17$ $7 - 3 = 4$

Chandru Maths

Find the smallest 4 digit which on divided by 5, 7, 11 & 13 gives remainder 2, 4, 8 & 10 respectively ?

(A) ~~5005~~

(B) 5002 ✓

(C) ~~5008~~

(D) ~~5029~~

	R	Diff
5 →	2 =	3
7 →	4 =	3
11 →	8 =	3
13 →	10 =	3

$x - 3$

5, 7, 11, 13

LCM: $5 \times 7 \times 11 \times 13 = 35 \times 143$

$$\begin{array}{r} 143 \\ 35 \\ \hline 715 \\ 429 \\ \hline 5005 \end{array}$$

2
1

LCM: $5005 - 3 = 5002$

Chandru Maths

Find the four digit number which is completely divisible by 12, 15, 18 & 27 ?

9×2

(A) ~~9690~~

(B) 9720

(C) ~~9930~~

(D) ~~9960~~

Chandru Maths

Find the minimum number which on divided by 48, 64, 90 & 120 leaves remainder as 38, 54, 80 & 110 ?

(A) 2870 -

(B) ~~2860~~ 7

(C) ~~2890~~ 1

(D) ~~2880~~ 9/90

48 38 10

64 54 10

90 80 10

120 110 10

90

80

9

8

Chandru Maths

Find the minimum number which on divided by 35, 45, 55 leaves remainder 18, 28, 38 respectively ?

(A) 3448 ✓

~~(B) 3482~~

~~(C) 2468~~

~~(D) 3265~~

45 → 28

9×5

28/8 3

28/9 : 1

5 → 3

9 → 1

Chandru Maths

Find a number between 4000 & 5000 which is completely divisible by 12, 18, 21 & 32 ?

(A) 4023

(B) 4032

(C) 4302

(D) 4203

4x3 9x2

Chandru Maths

The least number, which when divided by 20, 25, 35 and 40 leaves 14, 19, 29 and 34 as remainders respectively is

(A) 1394

~~(B) 1404~~

~~(C) 1664~~

~~(D) 1406~~

20 → 14

$\frac{14}{10}$

10×2

10 → 4

20

4×5

4 → 2

Chandru Maths

The greatest number of six digits which gives remainder 10 when divided by 36, 48, 54, 60 and 90 is :

(A) 999370

(B) ~~999470~~

(C) ~~999377~~

(D) ~~999870~~

36 → 10

4×9

9 → 1

$\frac{10}{9} = 1$

Chandru Maths

Find out the largest number of four digits, which divide by 15, 18, 21 and 24 respectively, leave the remainder 11, 14, 17 and 20 respectively.

(A) 6557
(B) 7556
(C) 5675
(D) 7664

Chandru Maths

The least number of 6-digit which when divide by 15, 25, 35, 42 and 70 respectively, leave the remainder 11, 21, 31, 38 and 66 respectively ?

(A) 100796
(B) 100256
(C) 100446
(D) 101046

Chandru Maths

Find the least number, which when divided by 27, 42, 63 and 84 leaves the remainder 21 in each case.

(A) 760

(B) 745

(C) 777

(D) 767

Chandru Maths

The LCM of two No. is 120. Which of the following cannot be HCF of these numbers.

(A) 8

(B) 12

(C) 24

(D) 35

HCF < N_1, N_2 > LCM 120

120

35

Chandru Maths

The ratio of two numbers is 2 : 3 and the LCM of these no. is 54. Find the sum of these numbers.

(A) 5

(B) 15

(C) 45 ✓

(D) 270

$N_1 = H \times a$

$N_2 = H \times b$

$N_1 : N_2 = a : b = 2 : 3$

$N_1 = 2H = 18$, $N_2 = 3H = 27$

LCM : $H \times a \times b$

$\cancel{54}\ 27 = H \times \cancel{2} \times 3$

$\boxed{H = 9}$

$$\begin{array}{r} 27 \\ 18 \\ \hline 45 \end{array}$$

Chandru Maths

The sum of two numbers is 56 and their LCM is 105. Find the numbers.

(A) ~~40, 16~~ 2

(B) ~~45, 11~~

(C) 21, 35

(D) ~~31, 25~~

$N_1 + N_2 = 56$

LCM : 105

N_1 N_2

9

105 6

11

105 13 12

31

Chandru Maths

The product of HCF and LCM of two number is 24. If the difference of the number is 2, then the larger (greater) number is

(A) 3, 1

(B) 4, 2

(C) 6, 4

(D) 8, 6

HCF × LCM = $N_1 \times N_2 = 24$

$N_1 - N_2 = 2$

Chandru Maths

The sum of two numbers is 36 and the HCF and LCM of these numbers are 3 and 105 respectively. Find the sum of their reciprocals.

(A) 2/35

(B) 3/25

(C) 4/35

(D) 2/25

$N_1 = H \times a \quad N_2 = H \times b$

$\frac{1}{N_1} + \frac{1}{N_2} = \frac{N_2 + N_1}{N_1 \times N_2} = \frac{N_1 + N_2 - 36}{N_1 \times N_2 - 3 \times 105}$

$N_1 \times N_2 = LCM \times HCF$

$= \frac{\cancel{36}^{\,4}}{\underset{35}{\cancel{3 \times 105}}} = 4/35$

Chandru Maths

The LCM of two numbers is 12 times of their HCF. The sum of HCF and LCM is 403. If first number is 93, find the 2nd number.

(A) 124

(B) 128

(C) 134

(D) 138

Chandru Maths

The ratio of two numbers is 3 : 4. The product of LCM and HCF is 10800. The sum of these numbers is

a b

(A) 180

(B) 210

(C) 225

(D) 240

$N_1 = 3 \times H$, $N_2 = 4 \times H$

$N_1 \times N_2 = LCM \times HCF = 10800$

$\cancel{3600}$ 900

$\cancel{3H \times 4H} = \cancel{10800}$

$H^2 = 900 = 30^2$

$\boxed{H = 30}$

$N_1 = 3 \times 30 = 90$

$N_2 = 4 \times 30 = 120$

210

Chandru Maths

The product of two numbers is 4107. If the HCF is 37, the greatest number is

(A) 185
(B) 111
(C) 107
(D) 101

$37a \times 37b = 4107$

$37 \overline{)4107}$
37
40
37
37

Chandru Maths

The LCM of 4 nos. is 117 and HCF of each pair is 3 then find the product of all the numbers.

(A) 3159 ✓

(B) 1539

(C) 5139

(D) 3951

$N_1 = H \times a$, $N_2 = H \times b$, $N_3 = H \times c$, $N_4 = H \times d$

$LCM = H \times a \times b \times c \times d = 117$

$a \times b \times c \times d = \frac{117}{3} = 39$

$N_1 \times N_2 \times N_3 \times N_4 = H \times a \times H \times b \times H \times c \times H \times d$

$= H^4 \times a \times b \times c \times d$

$= 3^4 \times 39 = 81 \times 39 = 3159$

$$\begin{array}{r} 81 \\ 39 \\ \hline 729 \\ 243 \\ \hline 3159 \end{array}$$

Chandru Maths

The LCM of two integers is 1237. What is their HCF ?

(A) 37

(B) 19

(C) 1

$H \times a \times b = 1237$

Chandru Maths

Bell

8
4
2

LCM

C - 20
B - 15
A - 10

LCM

8 | 10

15

min LCM

Chandru Maths

6, 8, 12 or 16 rows of the ninth class students are prepared, then no students is left. Find the possible number of students in the class.

(A) 60
(B) 72
(C) 80
(D) 96 ✓

$6 - 3 \times 2$

$8 - 2^3$

$12 - 2^2 \times 3$

$16 - 2^4$

LCM: $2^4 \times 3$

$= 16 \times 3 = 48 \times 2 = 96$

48×3

Chandru Maths

Five bells start ringing in the interval of 6, 7, 8, 9, 12 seconds respectively. after how many seconds they will ring at the same time ?

(A) 72

(B) 612

(C) 504

(D) 318

$6 - 2 \times 3$

$7 - 7$

$8 - 2^3$

$9 - 3^2$

$12 - 2^2 \times 3$

LCM $= 2^3 \times 3^2 \times 7$

$= 8 \times 9 \times 7$

$= 504$

$$\begin{array}{r} 63 \\ 8 \\ \hline 480 \\ 24 \\ \hline 504 \end{array}$$

Chandru Maths

Three men A, B and C in same direction from one point around a field start to run. A, B and C complete a cricle in 7 minutes, 8 minutes and 10 minutes respectively. When will they meet at the first time ?

(A) 4 hour/घण्टे

(B) 5 hour/ घण्टे

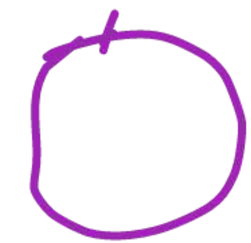
(C) 3 hour/ घण्टे

(D) None of these

A - 7 - 1

B - 8 - 2^3

C - 10 - 2×5



LCM = $2^3 \times 5 \times 7$

$= 8 \times 5 \times 7 = 280$ min

Time = $\frac{280}{60}$ = 4hr 40 min

Chandru Maths

Four runners started running in a circular path at the same time from one point. They complete one circle in 200 seconds, 300 seconds, 360 seconds and 450 seconds respectively. Accordingly. When will they meet at starting point ?

(A) 1800 second

(B) 3600 second

(C) 2400 second

(D) 4800 second

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$20 - 2^2 \times 5$

$30 - 5 \times 2 \times 3$

$36 - 4 \times 9 - 2^2 \times 3^2$

$45 - 9 \times 5 - 3^2 \times 5$

LCM: $2^2 \times 5 \times 3^2$

$= 4 \times 5 \times 9 = 20 \times 9 = 1800$ sec

Chandru Maths

Six bells start to ring at the same time. After that they ring after a gap of 2, 4, 6, 8, 10 & 12 seconds. How many times will they ring together in 30 minutes ?

30×60 Sec

1800

(A) 4

(B) 10

(C) 15

(D) 16

2 - 2

4 - 2^2

6 - 3×2

8 - 2^3

10 - 5×2

12 - 2^2×3

LCM: $2^3 \times 3 \times 5$

= 8×3×5 = 120 sec.

120 240 360

NO of Times: $\frac{30 \times 60}{120} + 1$ = 15+1 = 16

Chandru Maths

Three bells ring at an interval of 15, 20 & 30 minutes respectively. If all three bells ring together at 11 am, They when will they ring together again ?

11 am

(A) 11 : 30 AM

(B) 12 : 00 PM ✓

(C) 12: 30 PM

(D) 1 : 00 PM

15
20
30

LCM

60 min = 1hr

Chandru Maths

Rec. A = SA × n

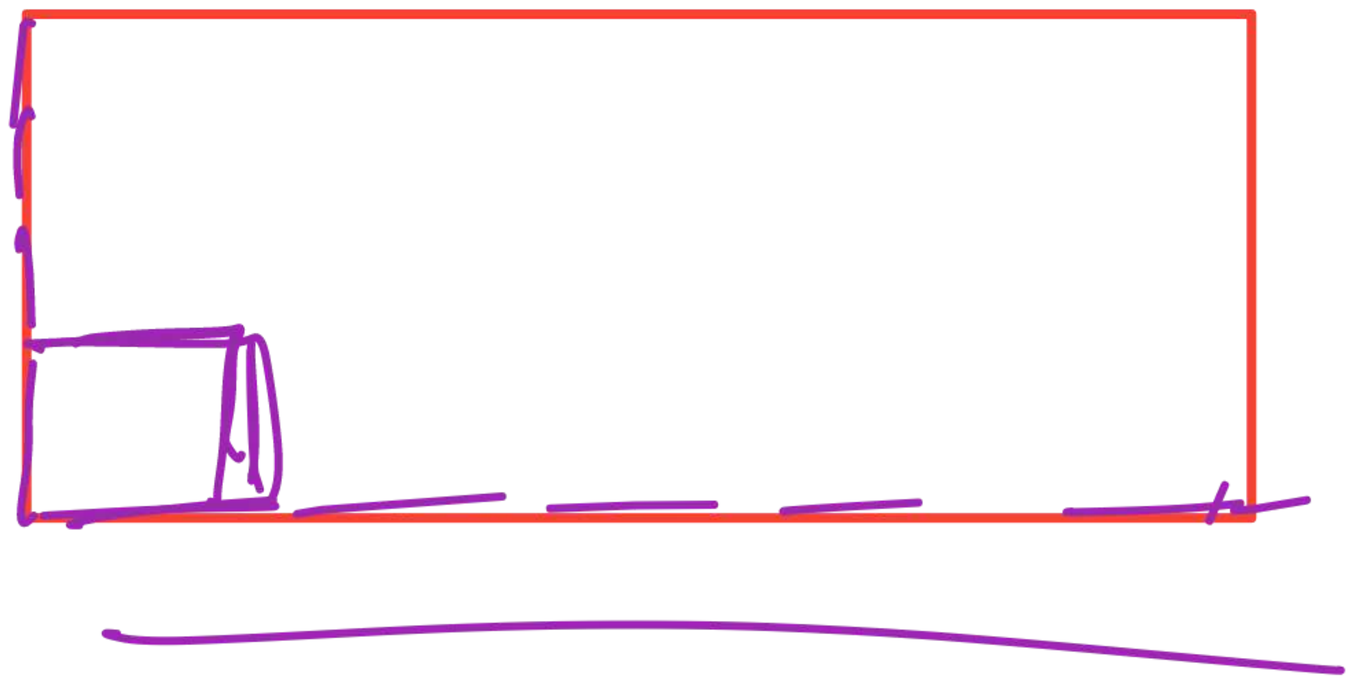
HCF

l b

$\frac{b}{\frac{lb}{a^2}}$ a^2

$\boxed{\frac{lb}{a^2} = n}$

HCF of l, b



Chandru Maths

The length and breadth of a room are 15 m 17 cm and 9 m 2 cm respectively. How many, squarical tiles will cover the area of the floor of this room (minimum).

(A) 258

(B) 837

(C) 814

(D) 899

HCF = 41 = a

$l \times b = a^2 \times n$

Side of square = a = HCF of l, b

902) 1517 (1
902
615) 902 (1
615
287) 615 (2
574
41) 287 (7
287
0

1517 cm

902 cm

$\frac{\cancel{1517}^{37} \times \cancel{902}^{22}}{41 \times 41} = n$

$\frac{41}{1}$

= 814

Chandru Maths

Four bells toll at intervals of 5, 6, 8 and 12 seconds respectively. In how much time they will toll together.

(A) 120 sec.

(B) 60 sec.

(C) 90 sec.

(D) 150 sec.

$5 - 5$

$6 - 3 \times 2$

$8 - 2^3$

$12 - 2^2 \times 3$

$5 \times 2^3 \times 3$

$= 120$ sec