
DELHI POLICE 2025
CONSTABLE HCM AWO/TPO DRIVER
यकीन बैच MATHS
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यकीन बैच
MATHS
LCM and HCF
Part -2
LIVE STREAMING
13-02-2025 11:00 AM

LCM | HCF

$\frac{a}{b}, \frac{c}{d}, \frac{e}{f}, \frac{g}{h}$ [simplest form]

LCM : $\frac{LCM(a,c,e,g)}{HCF(b,d,f,h)}$

HCF $\Rightarrow \frac{HCF(a,c,e,g)}{LCM(b,d,f,h)}$

$\frac{\cancel{10}}{\cancel{12}} \frac{5}{6}$

$\frac{2}{3}, \frac{3}{5}, \frac{4}{7}, \frac{8}{9}$

$HCF = \frac{HCF(2,3,4,8)}{LCM(3,5,7,9)} = \frac{1}{5 \times 7 \times 9} = \frac{1}{315}$

$LCM = \frac{LCM(2,3,4,8)}{HCF(3,5,7,9)} = \frac{24}{1}$

63
5
5

1. Find the least common multiple of 12, 36 and 80.
12, 36 और 80 का लघुतम समापवर्त्य ज्ञात कीजिए।
Delhi police constable 21/11/2023 Shift 1st
(a) 720
(b) 480
(c) 1440
(d) 360

2. What will be the least common multiple (LCM) of four numbers 15, 35, 42 and 72?
चार संख्याओं 15, 35, 42 और 72 का लघुत्तम समापवर्त्य (LCM) क्या होगा?

Delhi police constable 15/11/2023 1st shift

(a) 2050
(b) 2550
(c) 2520
(d) 2025

3. The sum of the digits of the LCM of the numbers 30, 48, 96, 150 is ____.

संख्या 30, 48, 96, 150 के LCM के अंकों का योग ___ है।

Delhi police constable 21/11/2023 2nd shift

(a) 14

(b) 12

(c) 6

(d) 8

4. Find the LCM of 9, 8.1, 0.27, 0.09.

9, 8.1, 0.27, 0.09 का एल.सी.एम. (LCM) ज्ञात करें।

Delhi police constable 30/11/2023 3rd shift

(a) 81

(b) 810

(c) 801

(d) 8100

$\frac{9}{1}, \frac{81}{10}, \frac{27}{100}, \frac{9}{100}$

$\frac{LCM(9, 81, 27, 9)}{HCF(1, 10, 100, 100)} = \frac{81}{1} = 81$

5. What is the least common multiple of 0.126, 0.36 and 0.96?

0.126, 0.36 और 0.96 का लघुत्तम समापवर्त्य क्या है?

(a) 2.016

(b) 201.60

(c) 20.16

(d) 20160

$$3 \mid 63, 9, 24$$
$$3 \mid 21, 3, 8$$
$$7, 1, 8$$

56×9
504

$\frac{\cancel{126}\ 63}{\cancel{1000}\ 500}, \frac{\cancel{36}\ 9}{\cancel{100}\ 25}, \frac{\cancel{96}\ 24}{\cancel{100}\ 25}$

$$\frac{LCM(63, 9, 24)}{HCF(500, 25, 25)} = \frac{504 \times 4}{25 \times 4} = \frac{2016}{100} = 20.16$$

$\frac{504}{25}$ 20.16

10 100

$$\begin{array}{r|l} 3 & 9, 12, 18, 21 \\ \hline & 3, 4, 6, 7 \end{array}$$

12

84×3

252

6. Find the LCM of $\frac{9}{10}, \frac{12}{25}, \frac{18}{35}, \frac{21}{40}$.

$\frac{9}{10}, \frac{12}{25}, \frac{18}{35}, \frac{21}{40}$ का एल.सी.एम.(LCM) ज्ञात करें।

Delhi police constable 24/11/2023 3rd shift

(a) $\frac{9}{100}$

(b) $\frac{252}{5}$

(c) $\frac{151}{7}$

(d) $\frac{100}{9}$

$$\frac{\text{LCM}(9, 12, 18, 21)}{\text{Hcf}(10, 25, 35, 40)} = \frac{252}{5}$$

7. Find the least common multiple (LCM) of $\frac{1}{6}, \frac{7}{27}, \frac{5}{9}, \frac{4}{15}$ and $\frac{8}{3}$.

$\frac{1}{6}, \frac{7}{27}, \frac{5}{9}, \frac{4}{15}$ और $\frac{8}{3}$ का लघुत्तम समापवर्त्य (LCM) ज्ञात करें।

Head Constable Ministerial 14/10/2022 Shift-III

(a) $\frac{280}{15}$

(b) $\frac{280}{3}$

(c) $\frac{3}{280}$

(d) $\frac{15}{280}$

$LCM = \frac{LCM(1,7,5,4,8)}{HCF(6,27,9,15,3)} = \frac{280}{3}$

⇒ Simple
⇒ Point
⇒ fraction
⇒ powers

87: $\frac{5}{20}, \frac{6}{18}, \frac{2}{3}, \frac{4}{5}$

LCM: $\frac{LCM(1,1,2,4)}{HCF(4,3,3,5)} = \frac{4}{1}$

HCF: $\frac{HCF(1,1,2,4)}{LCM(4,3,3,5)} = \frac{1}{60}$

$\underbrace{3^4 \times 5^3 \times 7 \times 11^4}_{LCM}$

HCF : $3^2 \times 5^1 \times 11^1$

8. Find the LCM of $3^4 \times 5^2 \times 7^2 \times 11$, $3^3 \times 5 \times 7 \times 11^2$ and $3^2 \times 5^3 \times 11^4$.

$3^4 \times 5^2 \times 7^2 \times 11$, $3^3 \times 5 \times 7 \times 11^2$ और $3^2 \times 5^3 \times 11^4$ का ल.स.प. ज्ञात कीजिए।

Delhi Head Constable Ministerial 20/10/2022 Shift-III

(a) $3^4 \times 5^3 \times 7^2 \times 11^4$

(b) $3^2 \times 5 \times 7 \times 11$

(c) $3^2 \times 5 \times 11$

(d) $3^4 \times 5 \times 7 \times 11^4$

Power Expression :

$$\cancel{2^3} \times 3^5 \times 5^7 \times 7^{11}$$

$$\cancel{2^7} \times 3^9 \times 5^{13} \times 7^4 \times 11^2$$

LCM :

बड़ी Power वाला LCM होगा और कुछ भी छूना नहीं चाहिए

$$2^7 \times 3^9 \times 5^{13} \times 7^{11} \times 11^2$$

HCF

छोटी Power लेंगे जो हर जगह मौजूद होगा केवल उसी को लेंगे

$$2^3 \times 3^5 \times 5^7 \times 7^4$$

a) $2^7 \times 7^9 \times 3^5 \times 5^3$

b) $3^9 \times 7^3 \times 11^2$

c) $7^5 \times 2^1 \times 3^5$

HCF / LCM

HCF : $\boxed{7^3 \times 3^5}$

LCM : $\boxed{2^7 \times 3^9 \times 5^3 \times 7^9 \times 11^2}$

9. Find the LCM of $2^2 \times 3^3 \times 5 \times 7^2, 2^3 \times 3^2 \times 5^2 \times 7^4, 2 \times 3 \times 5^3 \times 7 \times 11$.

$\cancel{2}^2 \times 3^3 \times 5 \times 7^2, \cancel{2}^3 \times 3^2 \times 5^2 \times 7^4, \cancel{2} \times 3 \times 5^3 \times 7 \times 11$ का ल. स. ज्ञात करें।

(a) $\cancel{2} \times 3 \times 5 \times 7$

(b) $\cancel{2} \times 3 \times 5 \times 7 \times 11$

(c) $2^3 \times 3^3 \times 5^3 \times 7^4 \times 11$ ✓✓

(d) $\cancel{2} \times 3 \times 5^2 \times 7^2 \times 11$

2^3

$$\begin{array}{c|l} 2 & 4, 6, 8 \\ \hline 2 & 2, 3, 4 \\ \hline & 1, 3, 2 \end{array}$$

10. Tell the L.C.M of $4a^3b^2c^2$, $6a^2b^3c$ and $8a^3bc^2$

$4a^3b^2c^2$, $6a^2b^3c$ और $8a^3bc^2$ का L.C.M बताओ

~~(a)~~ $12a^3b^3c^3$

(b) $24a^3b^3c^2$ $24a^3b^3c^2$

~~(c)~~ $18a^2b^2c^2$

~~(d)~~ $8a^3bc^2$

11. Least Common Multiple (LCM) of $x^2 - 8x + 15$ and $x^2 - 5x + 6$ is ______.

$x^2 - 8x + 15$ और $x^2 - 5x + 6$ का लघुतम समापवर्तक (LCM) ______ है।

Last

(a) $(x+5)(x+2)(x+3)$

(b) $(x-5)(x-2)(x-3)$

(c) $(x+5)(x-2)(x-3)$

(d) $(x-2)(x-3)^2(x-5)$

12. Find the least common multiple (LCM) of $x^3 - 27, x^2 - x - 6, x + 2$.

$x^3 - 27, x^2 - x - 6, x + 2$ का लघुत्तम समापवर्त्य (एलसीएम) ज्ञात करें।

(a) $(x-3)(x+2)(x^2-3x+9)$

(b) $(x+3)(x+2)(x^2-3x+9)$

(c) $(x-3)(x+2)(x^2+3x-9)$

(d) $(x-3)(x+2)(x^2+3x+9)$

$2x \qquad 3y$

<u>LCM</u>: $6xy$

$2ab \qquad 3cd$

$\boxed{6abcd}$

13. If the ratio of two numbers is 3:5 and their LCM is 10, then the sum of the numbers is:

यदि दो संख्याओं का अनुपात 3:5 है तथा उनका ल.स. 10 है, तो संख्याओं का योगफल है:

Delhi Police Forest Guard 03/03/2021 Shift-I

(a) 24
(b) 48
(c) 36
(d) 42

3A 5A

$\cancel{15}A = 90$ 6

8A

3A 5A

$15A = \frac{10^{2}}{15_{3}}$

8A

$8 \times \frac{2}{3} = 16/3$

14. The ratio of two numbers is 16:19 and their least common multiple (LCM) is 59280. Find the two numbers.

दो संख्याओं का अनुपात 16:19 है और उनका लघुत्तम समापवर्त्य (LCM) 59280 है। दोनों संख्याएँ ज्ञात करें।

Delhi police constable 24/11/2023 1st shift

(a) 3175 और 2123

(b) 5345 और 2298

(c) 3750 और 2130

(d) 3120 और 3705