

# Foundation Batch

# MATHS

## LCM & HCF

02

LIVE

19-03-2024 07:00PM





**Foundation Batch**

**MATHS**



**TYPE – III**

# LCM & HCF of fraction values  
भिन्न/लमक मानों का LCM & HCF

$$\left(\frac{a}{b}, \frac{c}{d}, \frac{e}{f}\right)$$

LCM

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

HCF

$$= \frac{\text{HCF}(a, c, e)}{\text{LCM}(b, d, f)}$$



Q

$$\frac{2}{3}, \frac{4}{9}, \frac{5}{12}$$

Lcm

$$\frac{\text{Lcm}(2, 4, 5)}{\text{Hcf}(3, 9, 12)} = \frac{20}{3}$$

$$\textcircled{3}(1, 3, 4)$$

Hcf

$$\frac{\text{Hcf}(2, 4, 5)}{\text{Lcm}(3, 9, 12)} = \frac{1}{36}$$



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LCM

$$\frac{LCM(18, 6, 18)}{HCF(5, 5, 125)} = \frac{18}{5}$$

$5(1, 1, 25)$

3.6

11. LCM of  $\frac{18}{5}$ ,  $\frac{6}{5}$  and  $\frac{18}{125}$  Find out.

$\frac{18}{5}$ ,  $\frac{6}{5}$  और  $\frac{18}{125}$  का ल.स. ज्ञात करें।

(a) 4.8

(b) 5.2

~~(c) 3.6~~

(d) 8.3

HCF

$$\frac{HCF(18, 6, 18)}{LCM(5, 5, 125)} = \frac{6}{125}$$

125





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$$\text{LCM}(25, 15, 20)$$

*Handwritten notes: 25 = 5 x 5, 15 = 3 x 5, 20 = 2 x 2 x 5. Arrows point from these factors to the LCM calculation.*

$$\text{HCF}(7, 28, 21)$$

$$(7)(1, 4, 3)$$

$$= \frac{300}{7}$$

12. LCM of  $\frac{25}{7}$ ,  $\frac{15}{28}$ ,  $\frac{20}{21}$  Find out.

$$\frac{25}{7}, \frac{15}{28}, \frac{20}{21} \text{ का ल.स. ज्ञात कीजिए।}$$

$$(A) 300/7$$

$$(B) 300$$

$$(C) 320/23$$

$$(D) 320$$

$$\underline{\underline{\text{Hcf}}}$$

$$\text{HCF}(25, 15, 20)$$

*Handwritten notes: 5(5 3 4) above the numbers.*

$$\text{LCM}(7, 28, 21)$$

$$7 \times 12 = 84$$

*Handwritten notes: 7 x 4 and 7 x 3 are written above the 12, with arrows pointing to them.*

$$= \frac{5}{84}$$



$$\frac{\text{HCF}(3, 5, 15)}{\text{LCM}(8, 12, 16)} = \frac{1}{48}$$

LCM calculation:  
 $4 \times 2 = 8$   
 $4 \times 3 = 12$   
 $4 \times 4 = 16$   
 $4 \times 12 = 48$

13. What is the greatest common factor of

$$\frac{3}{8}, \frac{5}{12} \text{ and } \frac{15}{16}$$

$\frac{3}{8}, \frac{5}{12}$  और  $\frac{15}{16}$  का महत्तम समापवर्तक (HCF) क्या है? LCM

(a)  $1/24$

(b)  $1/48$

(c)  $1/36$

(d)  $1/12$

$$\frac{\text{LCM}(3, 5, 15)}{\text{HCF}(8, 12, 16)}$$

$$\frac{15}{4}$$

$4(2, 3, 4)$





③ (3, 4, 6, 7)

HCF (9, 12, 18, 21)

---

LCM (10, 25, 35, 40)

$5 \times 2$     $5 \times 5$     $5 \times 7$     $5 \times 8$

35   8

$5 \times 8 \times 35$

$40 \times 35 = 1400$

14. HCF of  $\frac{9}{10}, \frac{12}{25}, \frac{18}{35}, \frac{21}{40}$  is

- (a)  $3/5$
- (b)  $252/5$
- (c)  $63/700$
- (d)  $3/1400$

$= \frac{3}{1400}$

$10, 25, 35, 40$





15. The HCF of  $\frac{11}{25}$ ,  $\frac{9}{20}$ ,  $\frac{16}{15}$  and  $\frac{10}{33}$ .

Find out.

$\frac{11}{25}$ ,  $\frac{9}{20}$ ,  $\frac{16}{15}$  और  $\frac{10}{33}$  का म.स.प. ज्ञात कीजिए।

(a)  $\frac{1}{300}$

(b)  $\frac{1}{330}$

(c)  $\frac{1}{33}$

(d)  $\frac{1}{3300}$



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**TYPE – IV**



## LCM & HCF of Decimal Values

दशमलव संख्याओं का LCM & HCF

Step-1 → दशमलव हटाकर हर में Zero से replace करते हैं

(\*) Step-2 → हर में Zero की संख्या बराबर करते हैं

Step-3 → भिन्न वाली संख्याओं का LCM & HCF वाली विधि लगा देंगे।

$$\frac{60}{100} \quad \frac{180}{100} \quad \frac{36}{100}$$

$$\downarrow$$

$$\text{LCM}(60, 180, 36)$$

$$\text{HCF}(100, 100, 100)$$

$$\frac{180}{100} = \text{LCM}$$

ex

$$(0.6, 1.8, 0.36)$$

$$\frac{6}{10}, \frac{18}{10}, \frac{36}{100}$$

$$\text{LCM} = \frac{\text{LCM}(6, 18, 36)}{\text{HCF}(10, 10, 100)} = \frac{36}{10} = \underline{\underline{3.6}}$$

LCM

least common multiple.





$$\frac{0\overset{r}{9}0}{100}, \frac{1\overset{r}{2}0}{100}, \frac{0\overset{r}{1}5}{100}$$

$$\frac{90}{100}, \frac{120}{100}, \frac{15}{100}$$

$$\frac{\text{LCM}(90, 120, 15)}{\text{HCF}(100, 100, 100)} = \frac{360}{100} = 3.6$$

17. 0.9, 1.2 and 0.15 Of LCM .....is

0.9, 1.2 और 0.15 का ल. स. ....है।

(1) 0.36

(2) 3.6

(3) 7.2

(4) 18



18. Find the LCM of 3.2, 2.72, 1.28 and 1.44.

$$\frac{320}{100}, \frac{272}{100}, \frac{128}{100}, \frac{144}{100}$$

$$\text{LCM} (320, 272, 128, 144)$$

$16 \times 20$   $16 \times 17$   $16 \times 8$   $16 \times 9$

---


$$\text{HCF} (100, 100, 100, 100)$$

3.2, 2.72, 1.28 और 1.44 का LCM ज्ञात कीजिए।

(A) 24.48

(B) 2448

~~(C) 979.20~~

(D) 244.8

$$\frac{16 \times 17 \times 360}{100} = \frac{272 \times 36}{10} = \frac{9792}{10} = 979.2$$





$$\frac{126}{1000}, \frac{360}{1000}, \frac{960}{1000}$$

$6 \times 21, 6 \times 60, 6 \times 160$

$$\text{LCM}(126, 360, 960)$$

$$\text{HCF}(1000, 1000, 1000)$$

$$\frac{18 \times 7 \times 20 \times 8}{1000}$$

$$\frac{18 \times 112}{100} = \frac{2016}{100} = \underline{\underline{20.16}}$$

19. LCM of 0.126, 0.36 and 0.96. Find (LCM).

0.126, 0.36 और 0.96 का ल.स.प. (LCM) ज्ञात करें।

- (a) 20.16  
(b) 20160  
(c) 201.60  
(d) 2.016

|    |               |
|----|---------------|
| 2  | 126, 360, 960 |
| 3  | 63, 180, 480  |
| 3  | 21, 60, 160   |
| 7  | 7, 20, 160    |
| 20 | 1, 20, 160    |
| 8  | 1, 1, 8       |
|    | 1, 1, 1       |





20. Find the HCF of 1.43, 1.87 and 20.9.

1.43, 1.87 और 20.9 का HCF ज्ञात कीजिये।

$$\frac{143}{100}, \frac{187}{100}, \frac{2090}{100}$$

(A) 11

(B) 1.11

(C) 1.1

(D) 0.11

$$\frac{\text{HCF}(143, 187, 2090)}{\text{LCM}(100, 100, 100)}$$

$$\frac{11}{100} = 0.11$$

$$\begin{array}{r} 11 \overline{) 143, 187, 2090} \\ \underline{13, 17, 190} \end{array}$$





**21. The H.C.F. of 1.75, 5.6 and 7 is**

**1.75, 5.6 और 7 का H.C.F है**

**(a) 0.07**

**(b) 0.7**

**(c) 3.5**

**(d) 0.35**



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**TYPE – V**



# LCM & HCF of power Numbers

## આપત વાલી સંખ્યાઓનો LCM & HCF

ex

$$2^3 \times 3^2 \times 5^1, \quad 2^4 \times 3^3 \times 5^2 \times 7^1$$

LCM

$$2^4 \times 3^3 \times 5^2 \times 7^1$$

HCF

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

ex

$$\underline{2^3 \times 3^2 \times 5^1}$$

$$\underline{7^1 \times 11^2 \times 13^3}$$

Lcm

HCF

①

$$\underline{2^3 \times 3^2 \times 5^1 \times 7^1 \times 11^2 \times 13^3}$$



$$2^1, 2^2, 2^3$$

$$\boxed{HCF = 2^1}$$

$2^0, 2^1, 2^2$

$LCM = 4 = 2^2$

$$2^0, 2^1, 2^2, 2^3, 2^4$$

$1, 2, 4, 8, 16$

$$LCM = 16 = 2^4$$



$$2^6, 5^3, 2^2 \times 3^3$$

$$Lcm = 2^6 \times 5^3 \times 3^3$$

22. What is the least common multiple of 64, 125 and 108?

64, 125 और 108 का लघुत्तम समापवर्तक कितना है?

$$4 \times 27$$

(1)  $2^2 \times 3^2 \times 4^2$

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

(3)  $2^6 \times 5^3 \times 3^3$

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







23.  $(2^2 \times 3^2 \times 5 \times 7)$ ,  $(2^2 \times 3 \times 5^2 \times 7)$  and  $(2 \times 3 \times 5 \times 7)$  Find (LCM).

$(\underline{2}^2 \times \underline{3}^2 \times \underline{5} \times \underline{7})$ ,  $(\underline{2}^2 \times \underline{3} \times \underline{5}^2 \times \underline{7})$  और  $(\underline{2}^1 \times \underline{3} \times \underline{5} \times \underline{7})$  का ल. स. (LCM) ज्ञात कीजिए।

(1) 9000

(2) 7200

(3) 8400

(4) 6300

$$\begin{aligned} \text{LCM} &= 2^2 \times 3^2 \times 5^2 \times 7 \\ &= 4 \times 9 \times 25 \times 7 = 6300 \end{aligned}$$



LCM

$$2^3 \times 3^3 \times 5^3 \times 7^4 \times 11$$

$$HCF = 2^1 \times 3^1 \times 5^1 \times 7^1$$

24. The LCM of  $2^2 \times 3^3 \times 5 \times 7^2$ ,  $2^3 \times 3^2 \times 5^2 \times 7^4$  and  $2 \times 3 \times 5^3 \times 7 \times 11$ . Find (LCM).

$2^2 \times 3^3 \times 5 \times 7^2$ ,  $2^3 \times 3^2 \times 5^2 \times 7^4$  और  $2^1 \times 3^1 \times 5^3 \times 7 \times 11$  का ल.स.प. (LCM) ज्ञात कीजिए।

(1)  $2^3 \times 3^3 \times 5^3 \times 7^4 \times 11$

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

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

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





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

$2^3 \times 3^4$  और  $2^5 \times 3^2$  का HCF क्या है?

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

(b)  $2^3 \times 3^4$

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

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

HCF =  $2^3 \times 3^2$



$$5^3 \times (2^2)^3 = 5^3 \times 2^6$$

$$3^5 \times 5^2 \times (2^2)^4 = 3^5 \times 5^2 \times 2^8$$

$$3^2 \times 5^1 \times (2^2)^3 = 3^2 \times 5^1 \times 2^6$$

26.  $(5^3 \times 4^3)$ ,  $(3^5 \times 5^2 \times 4^4)$  and  $(3^2 \times 5 \times 4^3)$

Find the greatest common multiple of?

$(5^3 \times 4^3)$ ,  $(3^5 \times 5^2 \times 4^4)$  और  $(3^2 \times 5 \times 4^3)$  का महत्तम समापवर्तक ज्ञात करें?

(1) 340 LCF

(2) 328

(3) 230

(4) 320

$$2^6 \times 5^1$$

$$64 \times 5$$

$$= 320$$





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H/W

27.  $(2^3 \times 5^3 \times 7^3)$ ,  $(2^2 \times 3^5 \times 5^2 \times 7^4)$ ,  $(2^3 \times 3^2 \times 5 \times 7^3)$  Find HCF of.

$(2^3 \times 5^3 \times 7^3)$ ,  $(2^2 \times 3^5 \times 5^2 \times 7^4)$ ,  $(2^3 \times 3^2 \times 5 \times 7^3)$  का HCF ज्ञात करें।

(1) 980

(2) 880

(3) 780

(4) 672