HCF & LCM

HCF and LCM

OnlineStudy4u

Placement for All.. All for Placement

This Video Completely covers the problems on"HCF & LCM" which is more than sufficient for all kind of placement Exams eg: TCS/WIPRO/AMCAT/ELITMUS/CoCubes and all other placement Exams.

HCF and LCM by : Pratik Shrivastava(10 years of industry experience and best Aptitude trainer)

HCF and LCM

Q1. Find the HCF of 169 and 182 ?

a. 8 b.13 c.17 d. none of these

Solution:

Trick ✓

169, 182 ✓

✓ 13 = HCF

HCF = GCD

↓

Highest common factor

HCF = difference or factors of diff

13 | 169 | 182 | 14

diff = 13 ✓

HCF = 13

169 | 182 | 1
169

13 | 169 | 13
169
xxx

HCF = 13 ✓

10 = 5 x 2
5 = 5 x 1

HCF = 5 ✓

HCF: 5, 10

5 | 10 | 2
10
xx

HCF and LCM

Q2. Find the HCF of 21 and 35 ?

a.7 b.14 c.28 d.5

Solution:

21, 35

diff = 14

= 2 x 7

HCF = 7

21 35 x
14

3 21, 35 5
7

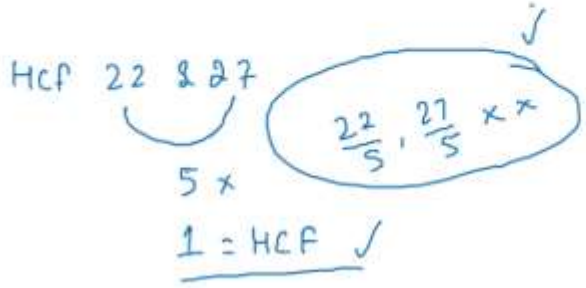
3 5
21, 35
14 x
7 = HCF

HCF and LCM

Q3. Find the HCF of 22 and 27 ?

a.1 b.11 c.9 d.3

Solution:

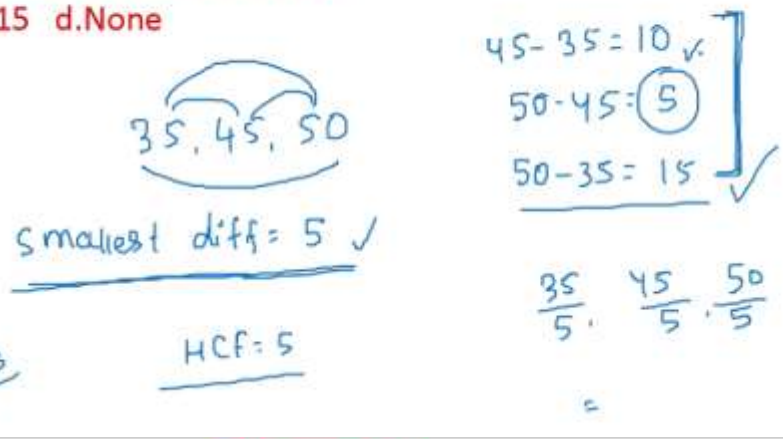


HCF and LCM

Q4. Find the HCF of 35, 45 and 50 ?

a.5 b.10 c.15 d.None

Solution:



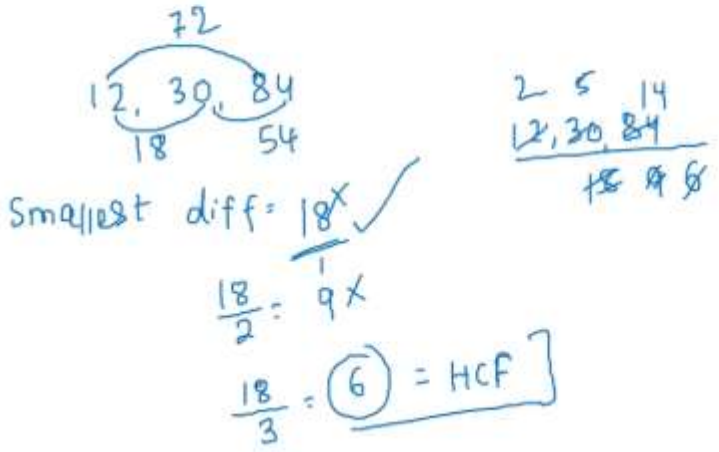
Previous

HCF and LCM

Q5. Find the HCF of 12, 30 and 84 ?

a.12 b.9 c.6 d.18

Solution:

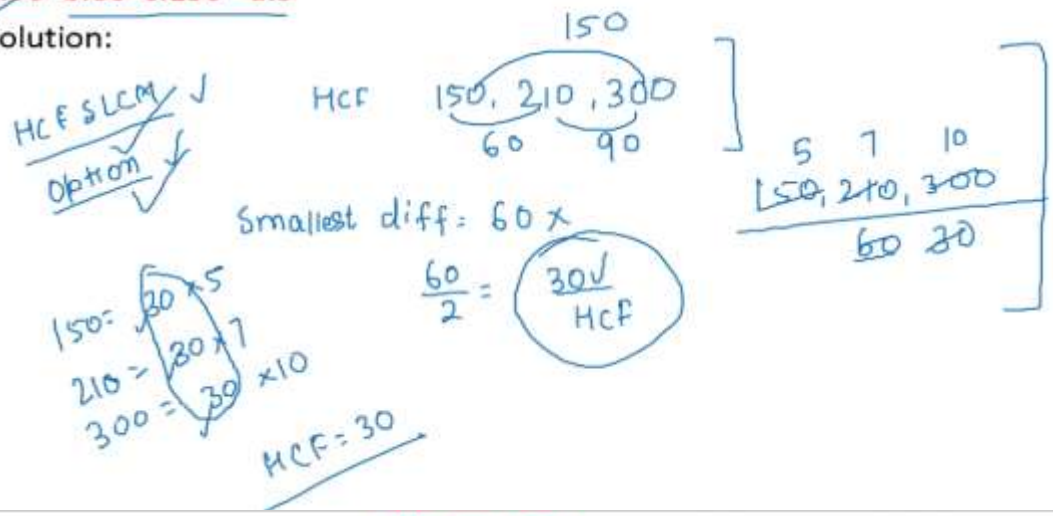


HCF and LCM

Q6 Find the HCF of 150, 210 and 300 ?

a.30 b.60 c.150 d.5

Solution:

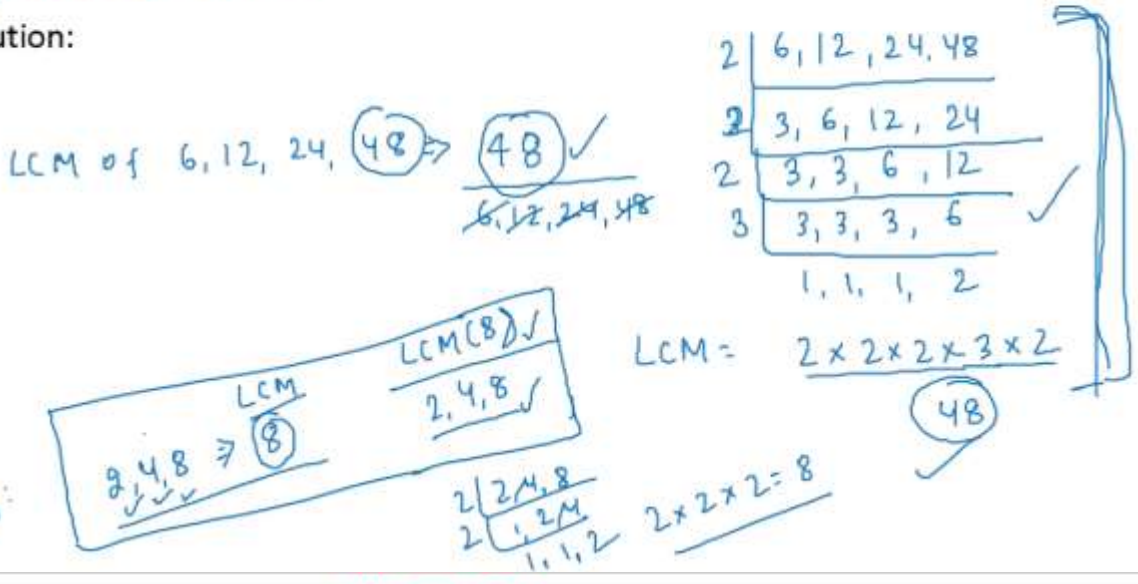


HCF and LCM

Q7. Find the LCM of 6, 12, 24 and 48 ?

a.48 b.96 c.24 d.None

Solution:

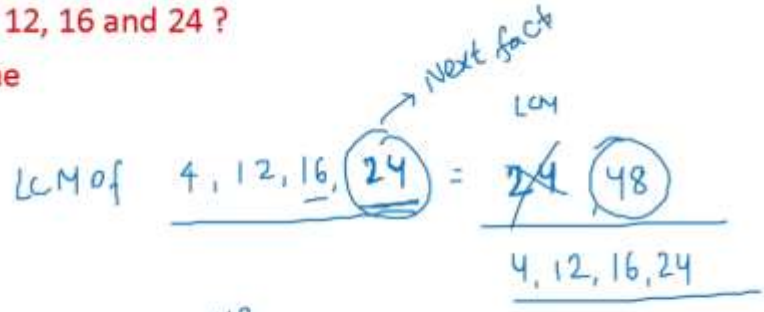


HCF and LCM

Q8. Find the LCM of 4, 12, 16 and 24 ?

a.48 b.96 c.24 d.None

Solution:



24 x 1, 24 x 2, 24 x 3
48
72

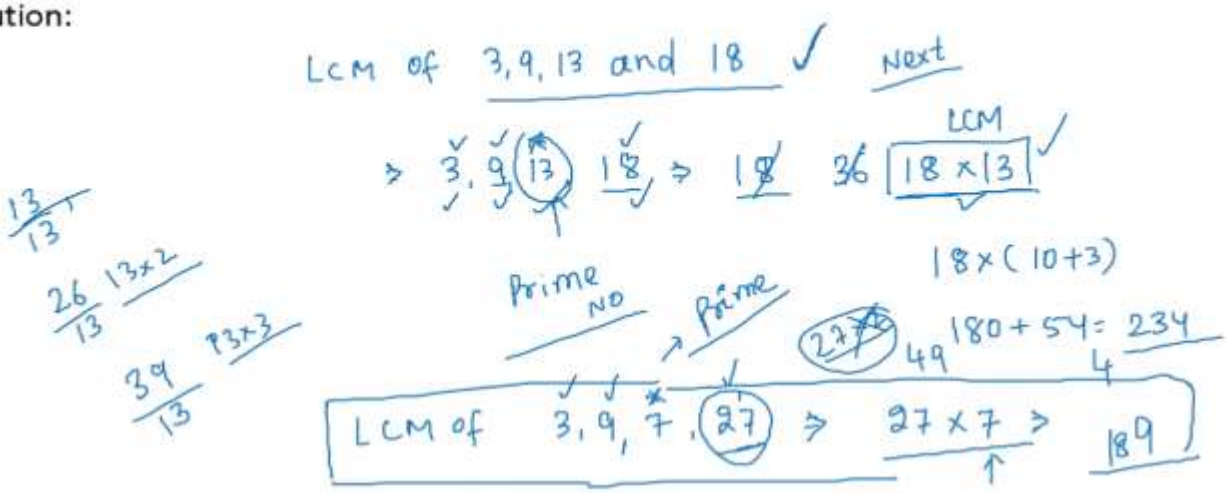
LCM = 48

HCF and LCM

Q9. Find the LCM of 3, 9, 13 and 18 ?

a.36 b.18 c.234 d.None

Solution:

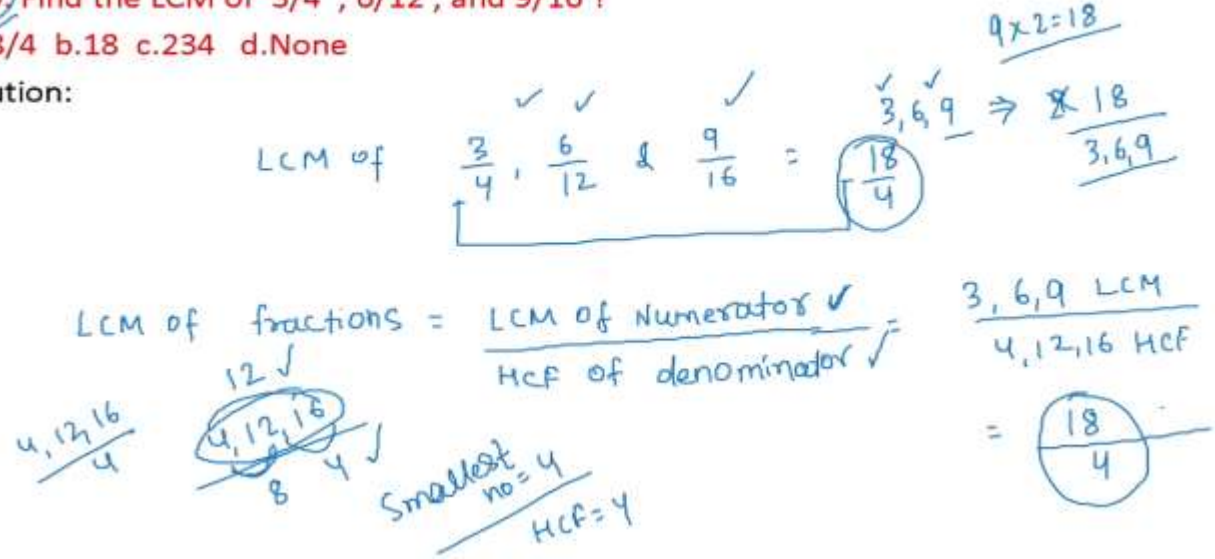


HCF and LCM

Q10. Find the LCM of 3/4 , 6/12 , and 9/16 ?

a.18/4 b.18 c.234 d.None

Solution:

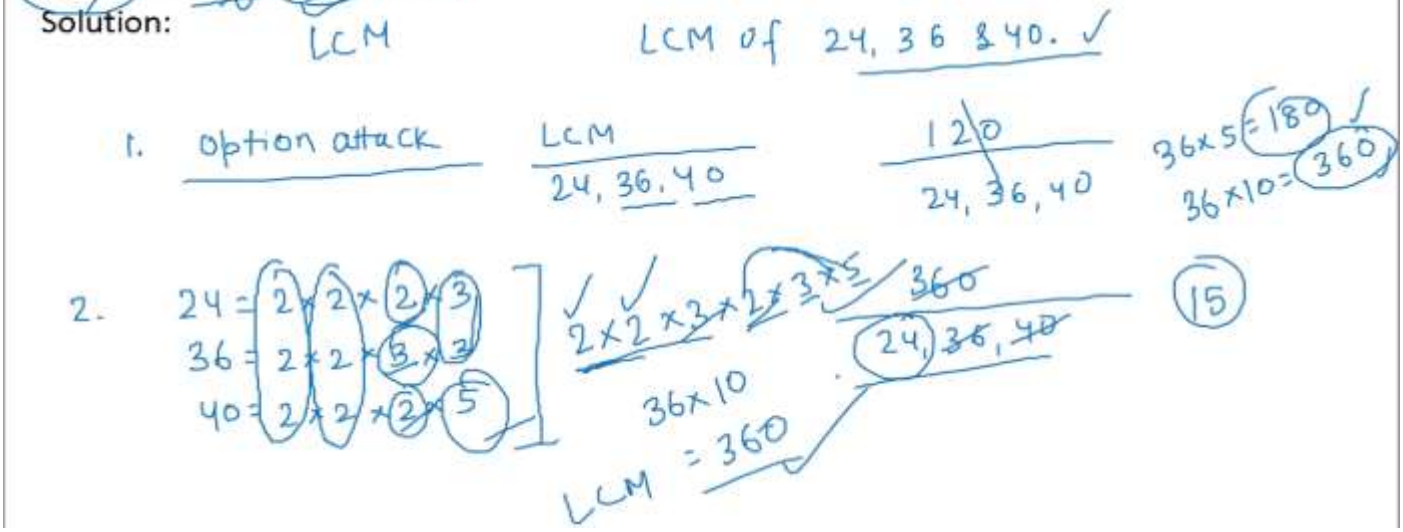


HCF and LCM

Q11. Find the Lowest common multiple of 24 ,36 and 40.

a. 120 b.249 c.360 d. 480

Solution:



HCF and LCM

Q12. what is the smallest number, which when divided by 12, 15, 18 and 27, leaves remainder of 8,11, 14 and 23.

a. 526 b.536 c.446 d.none

Solution:

Process

Best way

12) 536 (44
48
56
48
8

LCM

12 = 2 × 2 × 3
15 = 3 × 5
18 = 2 × 3 × 3
27 = 3 × 3 × 3

540 − 4 = 536

12, 15, 18, 27

4 (3, 4, 9, 2

⇒ 3 × 3 × 3 × 2 × 5 × 3

⇒ 540 LCM

Least

HCF and LCM

Q13. Find the Least number which when divided by 2,3,4,5,6 leaves a remainder of 1 but it is divided by 7 completely.

a.305 b.301 c.402 d.None

Solution:

option attack

7) 301 (43
28
21
21
0

60k + 1 ⇒ k = 5

60 × 5 + 1 = 301

FUB

Process:

2, 3, 4, 5, 6 ⇒ 30 60

5, 10, 15

Least

60k + 1

60 + 1 = 61

61 = 56k + 4k + 1

7

60 (LCM)

4k + 1

7

4×1+1
4×2+1
4×3+1
4×4+1
4×5+1
21

k = 5

4×5+1 / 7 = 21/7 = 3

HCF and LCM

Q14. Three friends Rudra, Siva and Anvesh start to run around a circular stadium. They complete a revolution in 24, 36 and 30 seconds respectively. After how many minutes will they meet at the starting point ?

A) 60 B) 120

C) 36 D) 6

36 sec = 6 min
60

4 min

A = 2 min

B = 4 min

2, 4 = 4 min

S

R = 24 s

S = 36 s

A = 30 s

30 × 5 = 150

30 × 10 = 300

LCM

2 | 24, 30, 36

3 | 12, 15, 18

2 | 4, 5, 6

2, 3, 5 = 30

36 × 5 = 180

36 × 10 = 360

LCM of 24, 30, 36

= 360 sec

HCF and LCM

Q15. Find the least number which is exactly divisible by 12, 15, and 20.

a. 40 ×
b. 50 ×
c. 60
d. 80

Solution:

LCM 60
12, 15, 20

Option attack

20×3
20×2

12, 15, 20 ⇒ ~~20~~ 40 60

HCF and LCM

Q16. Find the largest number of 4-digits divisible by 12, 15 and 18.

a. 9900
b. 9750
c. 9450
d. 9000

Solution:

Process

Largest 4 digit no = 9999

180 or LCM of 12, 15, 18 =

180) 9999 (55
900
999
900
99

9999
-99
9900

Largest 4

12, 15, 18

12 = 2×2×3
15 = 3×5
18 = 2×3×3

3×2×3×2×5
18×10 = 180

16

2, 4, 8

LCM (2, 4, 8)
8

HCF and LCM

Q17. H.C.F. of two numbers is 13. If these two numbers are in the ratio of 15: 11, then find the numbers.

a. 230, 140
b. 215, 130
c. 195, 143
d. 155, 115

Solution:

Ratio

1st : 2nd : 15 : 11

15×(10+3)

1st = 15x
2nd = 11x

HCF of 15x & 11x = 13

1st = 15x = 15×13 = 150 + 45 = 195
2nd = 11x = 11×13 = 110 + 33 = 143

15x/13, 11x/13

15 × x
11 × x

(2) 15×13/13, 11×13/13

HCF = x = 13

Option

195, 143

52/2 = 26
52/4 = 13

52 26 13

HCF and LCM

Q18. Find the least number, which when divided by 12, 15, 20 and 54 leaves a remainder of 8 in each case

a. 548
b. 540
c. 532
d. 524

Solution:

least number

540 : → 12, 15, 20, 54

540 + 8

548

LCM = 3 × 2 × 2 × 5 × 9

= 54 × 10

= 540

12 = 2 × 2 × 3

15 = 3 × 5

20 = 2 × 2 × 5

54 = 2 × 3 × 3 × 3

HCF and LCM

Q19. The traffic lights at three different road crossings change after every 40 sec, 72 sec and 108 sec respectively. If they all change simultaneously at 5 : 20 : 00 hours, then find the time at which they will change simultaneously.

a. 5 : 28 : 00 hrs
b. 5 : 30 : 00 hrs
c. 5 : 38 : 00 hrs
d. 5 : 40 : 00 hrs

5 : 20 : 00 hours

LCM = 2 × 2 × 2 × 5 × 3 × 3 × 3 ⇒ 40, 72, 108

= 4 × 27 × 10

= 1080 sec

⇒ 18 min

5 : 20 : 00
+ 18
5 : 38 : 00

40 = 2 × 2 × 2 × 5

72 = 2 × 2 × 2 × 3 × 3

108 = 2 × 2 × 3 × 3 × 3

108 × 5

108 × 10

108
540
1080

HCF and LCM

Q20. A rectangular courtyard 4.55 meters long and 5.25 meters wide is paved exactly with square tiles of same size. Find the largest size of the tile used for this purpose?

a. 25 cm
b. 45 cm
c. 21 cm
d. 35 cm

Solution:

HCF

largest size = HCF

35cm

HCF of 4.55m, 5.25m

455cm, 525cm

35) 455 (13
35
105

35) 525 (15
35
175

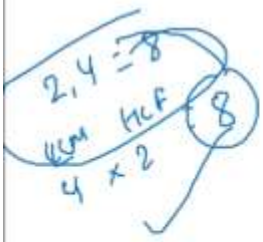
70
35

HCF and LCM

Q21. The product of two numbers is 2160 and their HCF is 12. What is their LCM?

a.180 b.140 c.240 d.540

Solution:



e LCM x HCF = product of 2 no

LCM x 12 = 2160

LCM = 2160/12 = 180

HCF and LCM

Q22. If the HCF and LCM of two consecutive(positive) even numbers be 2 and 84 respectively, then the sum of numbers is :

a.30 b.26 c.14 d.34

Solution:

Two positive even no: (2x+2), (2x+4)

: 12+14

: 26

LCM (2x+2) : 2(x+1) (2x5+2) = 12

(2x+4) : 2(x+2) 2x5+4 = 14

LCM = 2x (x+1) x (x+2)

$2x(x+1)(x+2) = 84$ 42

$x^2+2x+x+2 = 42$

$x^2+3x+2-42 = 0$

$x^2+3x-40 = 0$

$x^2+8x-5x-40 = 0$

$x(x+8)-5(x+8) = 0$

$x = 5, (-8)$ x

HCF and LCM

Q23. A number between 1000 and 2000 which when divided by 30,36 and 80 gives a remainder of 11 in each case is

a.1523 b.1451 c.1641 d.1712

Solution:

1000 & 2000

720K + 11

1440 + 11

1451

K = 2

30, 36, 80 => 720

= 2x 2x 3x5x3x4

720

30 = 3x2x5

36 = 2x2x3x3

80 = 2x2x2x2x5

HCF and LCM

Q24. The ratio of two numbers is 3:4 and their LCM is 120.the sum of numbers is :

a.70 b.35 c.140 d.105

Solution:

1st : 2nd = 3 : 4

1st = 3x

2nd = 4x

LCM of 3x & 4x = 12x

12x = 120

x = 10

3x + 4x = 7x

7 * 10

= 70