

## HCF AND LCM

1. Find the greatest number that will divide 43, 91 and 183 so as to leave the same remainder in each case.

- [A.](#) 4  
[B.](#) 7  
[C.](#) 9  
[D.](#) 13

**Answer:** Option A

**Explanation:**

Required number = H.C.F. of  $(91 - 43)$ ,  $(183 - 91)$  and  $(183 - 43)$   
= H.C.F. of 48, 92 and 140 = 4.

[View Answer](#) [Discuss in Forum](#) [Workspace](#) [Report](#)

---

2. The H.C.F. of two numbers is 23 and the other two factors of their L.C.M. are 13 and 14. The larger of the two numbers is:

- [A.](#) 276  
[B.](#) 299  
[C.](#) 322  
[D.](#) 345

**Answer:** Option C

**Explanation:**

Clearly, the numbers are  $(23 \times 13)$  and  $(23 \times 14)$ .

∴ Larger number =  $(23 \times 14) = 322$ .

[View Answer](#) [Discuss in Forum](#) [Workspace](#) [Report](#)

---

3. Six bells commence tolling together and toll at intervals of 2, 4, 6, 8, 10 and 12 seconds respectively. In 30 minutes, how many times do they toll together?

- [A.](#) 4  
[B.](#) 10  
[C.](#) 15  
[D.](#) 16

**Answer:** Option D

**Explanation:**

L.C.M. of 2, 4, 6, 8, 10, 12 is 120.

So, the bells will toll together after every 120 seconds(2 minutes).

In 30 minutes, they will toll together  $\frac{30}{2} + 1 = 16$  times.

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

4. Let N be the greatest number that will divide 1305, 4665 and 6905, leaving the same remainder in each case. Then sum of the digits in N is:

[A.](#) 4

[B.](#) 5

[C.](#) 6

[D.](#) 8

**Answer:** Option A

**Explanation:**

$N = \text{H.C.F. of } (4665 - 1305), (6905 - 4665) \text{ and } (6905 - 1305)$

$= \text{H.C.F. of } 3360, 2240 \text{ and } 5600 = 1120.$

Sum of digits in  $N = (1 + 1 + 2 + 0) = 4$

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

5. The greatest number of four digits which is divisible by 15, 25, 40 and 75 is:

[A.](#) 9000

[B.](#) 9400

[C.](#) 9600

[D.](#) 9800

**Answer:** Option C

**Explanation:**

Greatest number of 4-digits is 9999.

L.C.M. of 15, 25, 40 and 75 is 600.

On dividing 9999 by 600, the remainder is 399.

∴ Required number  $(9999 - 399) = 9600$

6. The product of two numbers is 4107. If the H.C.F. of these numbers is 37, then the greater number is:

[A.](#) 101

[B.](#) 107

[C.](#) 111

[D.](#) 185

**Answer:** Option C

**Explanation:**

Let the numbers be  $37a$  and  $37b$ .

Then,  $37a \times 37b = 4107$

$\Rightarrow ab = 3$ .

Now, co-primes with product 3 are (1, 3).

So, the required numbers are  $(37 \times 1, 37 \times 3)$  i.e., (37, 111).

$\therefore$  Greater number = 111.

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

7. Three number are in the ratio of 3 : 4 : 5 and their L.C.M. is 2400. Their H.C.F. is:

[A.](#) 40

[B.](#) 80

[C.](#) 120

[D.](#) 200

**Answer:** Option A

**Explanation:**

Let the numbers be  $3x$ ,  $4x$  and  $5x$ .

Then, their L.C.M. =  $60x$ .

So,  $60x = 2400$  or  $x = 40$ .

$\therefore$  The numbers are  $(3 \times 40)$ ,  $(4 \times 40)$  and  $(5 \times 40)$ .

Hence, required H.C.F. = 40.

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

8. The G.C.D. of 1.08, 0.36 and 0.9 is:

[A.](#) 0.03

[B.](#) 0.9

[C.](#) 0.18

[D.](#) 0.108

**Answer:** Option C

**Explanation:**

Given numbers are 1.08, 0.36 and 0.90. H.C.F. of 108, 36 and 90 is 18,

∴ H.C.F. of given numbers = 0.18.

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

9. The product of two numbers is 2028 and their H.C.F. is 13. The number of such pairs is:

[A.](#) 1

[B.](#) 2

[C.](#) 3

[D.](#) 4

**Answer:** Option B

**Explanation:**

Let the numbers  $13a$  and  $13b$ .

Then,  $13a \times 13b = 2028$

$\Rightarrow ab = 12$ .

Now, the co-primes with product 12 are (1, 12) and (3, 4).

[Note: Two integers  $a$  and  $b$  are said to be **coprime** or relatively prime if they have no common positive factor other than 1 or, equivalently, if their greatest common divisor is 1 ]

So, the required numbers are (13 x 1, 13 x 12) and (13 x 3, 13 x 4).

Clearly, there are 2 such pairs.

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

10. The least multiple of 7, which leaves a remainder of 4, when divided by 6, 9, 15 and 18 is:

[A.](#) 74

[B.](#) 94

[C.](#) 184

[D.](#) 364

**Answer:** Option D

**Explanation:**

L.C.M. of 6, 9, 15 and 18 is 90.

Let required number be  $90k + 4$ , which is multiple of 7.

Least value of  $k$  for which  $(90k + 4)$  is divisible by 7 is  $k = 4$ .

∴ Required number =  $(90 \times 4) + 4 = 364$ .

11. Find the lowest common multiple of 24, 36 and 40.

[A.](#) 120

[B.](#) 240

[C.](#) 360

[D.](#) 480

**Answer:** Option C

**Explanation:**

$$\begin{array}{r} 2 \mid 24 - 36 - 40 \\ \hline 2 \mid 12 - 18 - 20 \\ \hline 2 \mid 6 - 9 - 10 \\ \hline 3 \mid 3 - 9 - 5 \\ \hline \mid 1 - 3 - 5 \end{array}$$

$$\text{L.C.M.} = 2 \times 2 \times 2 \times 3 \times 3 \times 5 = 360.$$

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

12. The least number which should be added to 2497 so that the sum is exactly divisible by 5, 6, 4 and 3 is:

[A.](#) 3

[B.](#) 13

[C.](#) 23

[D.](#) 33

**Answer:** Option C

**Explanation:**

L.C.M. of 5, 6, 4 and 3 = 60.

On dividing 2497 by 60, the remainder is 37.

$\therefore$  Number to be added =  $(60 - 37) = 23$ .

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

13. Reduce  $\frac{128352}{238368}$  to its lowest terms.

[A.](#)  $\frac{3}{4}$

[B.](#)  $\frac{5}{13}$

C.  $\frac{7}{13}$

D.  $\frac{9}{13}$

**Answer:** Option C

**Explanation:**

$$\begin{array}{r}
 128352 \overline{) 238368} \quad (1 \\
 \underline{128352} \phantom{000000} \\
 110016 \phantom{000000} \quad (128352 \quad (1 \\
 \underline{110016} \phantom{000000} \\
 18336 \phantom{000000} \quad (110016 \quad (6 \\
 \underline{110016} \phantom{000000} \\
 \phantom{000000} 0 \phantom{000000} \quad \times \\
 \phantom{000000} 0 \phantom{000000}
 \end{array}$$

So, H.C.F. of 128352 and 238368 = 18336.

$$\text{Therefore, } \frac{128352}{238368} = \frac{128352 \div 18336}{238368 \div 18336} = \frac{7}{13}$$

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

14. The least number which when divided by 5, 6, 7 and 8 leaves a remainder 3, but when divided by 9 leaves no remainder, is:

A. 1677

B. 1683

C. 2523

D. 3363

**Answer:** Option B

**Explanation:**

L.C.M. of 5, 6, 7, 8 = 840.

∴ Required number is of the form  $840k + 3$

Least value of  $k$  for which  $(840k + 3)$  is divisible by 9 is  $k = 2$ .

∴ Required number =  $(840 \times 2 + 3) = 1683$ .

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

15. A, B and C start at the same time in the same direction to run around a circular stadium. A completes a round in 252 seconds, B in 308 seconds and c in 198 seconds, all starting at the same point. After what time will they again at the starting point ?

A. 26 minutes and 18 seconds

[B.](#) 42 minutes and 36 seconds

[C.](#) 45 minutes

[D.](#) 46 minutes and 12 seconds

**Answer:** Option D

**Explanation:**

L.C.M. of 252, 308 and 198 = 2772.

So, A, B and C will again meet at the starting point in 2772 sec. i.e., 46 min. 12 sec

16. The H.C.F. of two numbers is 11 and their L.C.M. is 7700. If one of the numbers is 275, then the other is:

[A.](#) 279

[B.](#) 283

[C.](#) 308

[D.](#) 318

**Answer:** Option C

**Explanation:**

$$\text{Other number} = \left( \frac{11 \times 7700}{275} \right) = 308.$$

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

17. What will be the least number which when doubled will be exactly divisible by 12, 18, 21 and 30 ?

[A.](#) 196

[B.](#) 630

[C.](#) 1260

[D.](#) 2520

**Answer:** Option B

**Explanation:**

L.C.M. of 12, 18, 21 30

$$= 2 \times 3 \times 2 \times 3 \times 7 \times 5 = 1260.$$

$$\text{Required number} = (1260 \times 2)$$

$$= 630.$$

$$\begin{array}{r} 2 \mid 12 \quad - \quad 18 \quad - \quad 21 \quad - \quad 30 \\ \hline 3 \mid 6 \quad - \quad 9 \quad - \quad 21 \quad - \quad 15 \\ \hline \quad \mid 2 \quad - \quad 3 \quad - \quad 7 \quad - \quad 5 \end{array}$$

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

18. The ratio of two numbers is 3 : 4 and their H.C.F. is 4. Their L.C.M. is:

[A.](#) 12

[B.](#) 16

[C.](#) 24

[D.](#) 48

**Answer:** Option D

**Explanation:**

Let the numbers be  $3x$  and  $4x$ . Then, their H.C.F. =  $x$ . So,  $x = 4$ .

So, the numbers 12 and 16.

L.C.M. of 12 and 16 = 48.

[View Answer](#) [Discuss](#) in Forum [Workspace](#) [Report](#)

---

19. The smallest number which when diminished by 7, is divisible 12, 16, 18, 21 and 28 is:

[A.](#) 1008

[B.](#) 1015

[C.](#) 1022

[D.](#) 1032

**Answer:** Option B

**Explanation:**

Required number = (L.C.M. of 12, 16, 18, 21, 28) + 7

= 1008 + 7

= 1015

[View Answer](#) [Discuss](#) in Forum [Workspace](#) [Report](#)

---

20. 252 can be expressed as a product of primes as:

[A.](#)  $2 \times 2 \times 3 \times 3 \times 7$

[B.](#)  $2 \times 2 \times 2 \times 3 \times 7$

[C.](#)  $3 \times 3 \times 3 \times 3 \times 7$

[D.](#)  $2 \times 3 \times 3 \times 3 \times 7$

**Answer:** Option A

**Explanation:**

Clearly,  $252 = 2 \times 2 \times 3 \times 3 \times 7$ .

21. The greatest possible length which can be used to measure exactly the lengths 7 m, 3 m 85 cm, 12 m 95 cm is:



[A.](#) 15 cm

[B.](#) 25 cm

[C.](#) 35 cm

[D.](#) 42 cm

**Answer:** Option C

**Explanation:**

Required length = H.C.F. of 700 cm, 385 cm and 1295 cm = 35 cm.

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

22. Three numbers which are co-prime to each other are such that the product of the first two is 551 and that of the last two is 1073. The sum of the three numbers is:

[A.](#) 75

[B.](#) 81

[C.](#) 85

[D.](#) 89

**Answer:** Option C

**Explanation:**

Since the numbers are co-prime, they contain only 1 as the common factor.

Also, the given two products have the middle number in common.

So, middle number = H.C.F. of 551 and 1073 = 29;

First number =  $\left(\frac{551}{29}\right) = 19$ ; Third number =  $\left(\frac{1073}{29}\right) = 37$ .

∴ Required sum =  $(19 + 29 + 37) = 85$ .

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

23. Find the highest common factor of 36 and 84.

[A.](#) 4

[B.](#) 6

[C.](#) 12

[D.](#) 18

**Answer:** Option C

**Explanation:**

$$36 = 2^2 \times 3^2$$

$$84 = 2^2 \times 3 \times 7$$

$$\therefore \text{H.C.F.} = 2^2 \times 3 = 12.$$

24. Which of the following fraction is the largest ?

[A.](#)  $\frac{7}{8}$

[B.](#)  $\frac{13}{16}$

[C.](#)  $\frac{31}{40}$

[D.](#)  $\frac{63}{80}$

**Answer:** Option A

**Explanation:**

L.C.M. of 8, 16, 40 and 80 = 80.

$$\frac{7}{8} = \frac{70}{80} ; \quad \frac{13}{16} = \frac{65}{80} ; \quad \frac{31}{40} = \frac{62}{80}$$

$$\text{Since, } \frac{70}{80} > \frac{65}{80} > \frac{63}{80} > \frac{62}{80}, \text{ so } \frac{7}{8} > \frac{13}{16} > \frac{63}{80} > \frac{31}{40}$$

So,  $\frac{7}{8}$  is the largest.

25. The least number, which when divided by 12, 15, 20 and 54 leaves in each case a remainder of 8 is:

[A.](#) 504

[B.](#) 536

[C.](#) 544

[D.](#) 548

**Answer:** Option D

**Explanation:**

$$\text{Required number} = (\text{L.C.M. of } 12, 15, 20, 54) + 8$$

$$= 540 + 8$$

$$= 548.$$

26. The greatest number which on dividing 1657 and 2037 leaves remainders 6 and 5 respectively, is:

[A.](#) 123

[B.](#) 127

[C.](#) 235

[D.](#) 305

**Answer:** Option B

**Explanation:**

Required number = H.C.F. of  $(1657 - 6)$  and  $(2037 - 5)$   
= H.C.F. of 1651 and 2032 = 127.

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

27. Which of the following has the most number of divisors?

[A.](#) 99

[B.](#) 101

[C.](#) 176

[D.](#) 182

**Answer:** Option C

**Explanation:**

$$99 = 1 \times 3 \times 3 \times 11$$

$$101 = 1 \times 101$$

$$176 = 1 \times 2 \times 2 \times 2 \times 2 \times 11$$

$$182 = 1 \times 2 \times 7 \times 13$$

So, divisors of 99 are 1, 3, 9, 11, 33, .99

Divisors of 101 are 1 and 101

Divisors of 176 are 1, 2, 4, 8, 11, 16, 22, 44, 88 and 176

Divisors of 182 are 1, 2, 7, 13, 14, 26, 91 and 182.

Hence, 176 has the most number of divisors.

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

28. The L.C.M. of two numbers is 48. The numbers are in the ratio 2 : 3. Then sum of the number is:

[A.](#) 28

[B.](#) 32

[C.](#) 40

[D.](#) 64

**Answer:** Option C

**Explanation:**

Let the numbers be  $2x$  and  $3x$ .

Then, their L.C.M. =  $6x$ .

So,  $6x = 48$  or  $x = 8$ .

$\therefore$  The numbers are 16 and 24.

Hence, required sum =  $(16 + 24) = 40$ .

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

29. The H.C.F. of  $\frac{9}{10}$ ,  $\frac{12}{25}$ ,  $\frac{18}{35}$  and  $\frac{21}{40}$  is:

[A.](#)  $\frac{3}{5}$

[B.](#)  $\frac{252}{5}$

[C.](#)  $\frac{3}{1400}$

[D.](#)  $\frac{63}{700}$

**Answer:** Option C

**Explanation:**

Required H.C.F. =  $\frac{\text{H.C.F. of } 9, 12, 18, 21}{\text{L.C.M. of } 10, 25, 35, 40} = \frac{3}{1400}$

[View Answer](#) [Discuss in Forum](#) [Workspace Report](#)

---

30. If the sum of two numbers is 55 and the H.C.F. and L.C.M. of these numbers are 5 and 120 respectively, then the sum of the reciprocals of the numbers is equal to:

[A.](#)  $\frac{55}{601}$

[B.](#)  $\frac{601}{55}$

[C.](#)  $\frac{11}{120}$

[D.](#)  $\frac{120}{11}$

**Answer:** Option C

**Explanation:**

Let the numbers be  $a$  and  $b$ .

Then,  $a + b = 55$  and  $ab = 5 \times 120 = 600$ .

$$\therefore \text{The required sum} = \frac{1}{a} + \frac{1}{b} = \frac{a+b}{ab} = \frac{55}{600} = \frac{11}{120}$$