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1. The LCM of two numbers is 864 and their HCF is 144. If one of the numbers is 288, the other number is:

   A. 576
   B. 1296
   C. 432
   D. 144

2. LCM of two numbers is 225 and their HCF is 5. If one number is 25, the other number will be:

   A. 5
   B. 25
   C. 45
   D. 225

3. The L.C.M. of two numbers is 1820 and their H.C.F. is 26. If one number is 130 then the other number is:

   A. 70
   B. 1690
   C. 364
   D. 1264

4. The LCM of two numbers is 1920 and their HCF is 16. If one of the numbers is 128, find the other number.

   A. 204
   B. 240
   C. 260
   D. 320

5. The HCF of two numbers 12906 and 14818 is 478. Their LCM is

   A. 400086
   B. 200043
   C. 600129
   D. 800172

6. The H.C.F. and L.C.M. of two 2- digit numbers are 16 and 480 respectively. The numbers are:

   A. 40, 48
   B. 60, 72
   C. 64, 80
   D. 80, 96

7. The HCF of two numbers is 16 and their LCM is 160. If one of the number is 32, then the other number is

   A. 48
   B. 80
   C. 96
   D. 112

8. The product of two numbers is 4107. If the H.C.F. of the numbers is 37, the greater number is

   A. 185
   B. 111
   C. 107
   D. 101

9. The HCF of two numbers is 15 and their LCM is 300. If one of the number is 60, the other is:

   A. 50
   B. 75
   C. 65
   D. 100

10. The HCF and LCM of two numbers are 12 and 924 respectively. Then the number of such pairs is

   A. 0
   B. 1
   C. 2
   D. 3

11. The LCM of two numbers is 30 and their HCF is 5. One of the number is 10. The other is

   A. 20
   B. 25
   C. 15
   D. 5

12. The product of two numbers is 1280 and their H.C.F. is 8. The L.C.M. of the number will be:

   A. 160
   B. 150
   C. 120
   D. 140

13. The H.C.F. and L.C.M. of two numbers are 8 and 48 respectively. If one of the number is 24, then the other number is

   A. 48
   B. 36
   C. 24
   D. 16

14. The H.C.F and L.C.M of two numbers are 12 and 336 respectively. If one of the number is 84, the other is

   A. 36
   B. 48
   C. 72
   D. 96

15. The product of two numbers is 216. If the HCF is 6, then their LCM is

   A. 72
   B. 60
   C. 48
   D. 36

16. The HCF and LCM of two numbers are 18 and 378 respectively. If one of the number is 54, then the other number is

   A. 126
   B. 144
   C. 198
   D. 238

17. The HCF and product of two numbers are 15 and 6300 respectively. The number of possible pairs of the numbers is

   A. 4
   B. 3
   C. 2
   D. 1

18. The HCF of two numbers is 15 and their LCM is 225. If one of the number is 75, then the other number is:

   A. 105
   B. 90
   C. 60
   D. 45

19. The LCM of two numbers is 520 and their HCF is 4. If one of the number is 52, then the other number is

   A. 40
   B. 42
   C. 50
   D. 52

20. The H.C.F. of two numbers is 96 and their L.C.M. is 1296. If one of the number is 864, the other is

   A. 132
   B. 135
   C. 140
   D. 144

21. The LCM of two numbers is 4 times their HCF. The sum of LCM and HCF is 125. If one of the number is 100, then the other number is

   A. 5
   B. 25
   C. 100
   D. 125

22. Product of two co-prime numbers is 117. Then their L.C.M. is

   A. 117
   B. 9
   C. 13

D. 39

23. The product of two numbers is 2160 and their HCF is 12. Number of such possible pairs is

A. 1
B. 2
C. 3
D. 4

24. LCM of two numbers is 2079 and their HCF is 27. If one of the number is 189, the other number is

A. 297
B. 584
C. 189
D. 216

25. The product of two numbers is 2028 and their HCF is 13. The number of such pairs is

A. 1
B. 2
C. 3
D. 4

26. The HCF and LCM of two numbers are 13 and 455 respectively. If one of the number lies between 75 and 125, then, that number is:

A. 78
B. 91
C. 104
D. 117

27. The H.C.F. of two numbers is 8. Which one of the following can never be their L.C.M.?

A. 24
B. 48
C. 56
D. 60

28. The HCF of two numbers is 23 and the other two factors of their LCM are 13 and 14. The larger of the two numbers is:

A. 276
B. 299
C. 345
D. 322

29. The L.C.M. of three different numbers is 120. Which of the following cannot be their H.C.F.?

A. 8
B. 12
C. 24
D. 35

30. The H.C.F. and L.C.M. of two numbers are 44 and 264 respectively. If the first number is divided by 2, the quotient is 44.

A. 147
B. 528
C. 132
D. 264

31. The least number which when divided by 4, 6, 8, 12 and 16 leaves a remainder of 2 in each case is:

A. 46
B. 48
C. 50
D. 56

32. The least number, which when divided by 12, 15, 20 or 54 leaves a remainder of 4 in each case, is:

A. 450
B. 454
C. 540
D. 544

33. Find the greatest number of five digits which when divided by 3, 5, 8, 12 have 2 as remainder

A. 99999
B. 99958

C. 99960

D. 99962

34. The least multiple of 13, which on dividing by 4, 5, 6, 7 and 8 leaves remainder 2 in each case is:

A. 2520

B. 842

C. 2522

D. 840

35. A, B, C start running at the same time and at the same point in the same direction in a circular stadium. A completes a round in 252 seconds, B in 308 seconds and C in 198 seconds. After what time will they meet again at the starting point?

A. 26 minutes 18 seconds

B. 42 minutes 36 seconds

C. 45 minutes

D. 46 minutes 12 seconds

36. Find the largest number of four digits such that on dividing by 15, 18, 21 and 24 the remainders are 11, 14, 17 and 20 respectively.

A. 6557

B. 7556

C. 5675

D. 7664

37. The least perfect square, which is divisible by each of 21, 36 and 66 is

A. 214344

B. 214434

C. 213444

D. 231444

38. The least number, which when divided by 4, 5 and 6 leaves remainder 1, 2 and 3 respectively, is

A. 57

B. 59

C. 61

D. 63

39. Let the least number of six digits which when divided by 4, 6, 10, 15 leaves in each case same remainder 2 be N. The sum of digits in N is:

A. 3

B. 5

C. 4

D. 6

40. Which is the least number which when doubled will be exactly divisible by 12, 18, 21 and 30?

A. 2520

B. 1260

C. 630

D. 196

41. The smallest square number divisible by 10, 16 and 24 is

A. 900

B. 1600

C. 2500

D. 3600

42. If the students of a class can be grouped exactly into 6 or 8 or 10, then the minimum number of students in the class must be

A. 60

B. 120

C. 180

D. 240

43. The least number which when divided by 4, 6, 8 and 9 leave zero remainder in each case and when divided by 13 leaves a remainder of 7 is:

A. 144

B. 72

C. 36

D. 85

44. The smallest number, which when divided by 12 and 16 leaves remainder 5 and 9 respectively, is:

A. 55
B. 41
C. 39
D. 29

45. A number which when divided by 10 leaves a remainder of 9, when divided by 9 leaves a remainder of 8, and when divided by 8 leaves a remainder of 7, is :

A. 1539
B. 539
C. 359
D. 1359

46. What is the smallest number which leaves remainder 3 when divided by any of the numbers 5, 6 or 8 but leaves no remainder when it is divided by 9?

A. 123
B. 603
C. 723
D. 243

47. The least number which when divided by 16, 18, 20 and 25 leaves 4 as remainder in each case but when divided by 7 leaves no remainder is

A. 17004
B. 18000
C. 18002
D. 18004

48. What is the least number which when divided by the numbers 3, 5, 6, 8, 10 and 12 leaves in each case a remainder 2 but when divided by 13 leaves no remainder?

A. 312

B. 962
C. 1562
D. 1586

49. The least multiple of 7, which leaves the remainder 4, when divided by any of 6, 9, 15 and 18, is

A. 76
B. 94
C. 184
D. 364

50. The largest number of five digits which, when divided by 16, 24, 30, or 36 leaves the same remainder 10 in each case, is:

A. 99279
B. 99370
C. 99269 TM
D. 99350

Answers and Explanation

1. Answer: C

Explanation: Required number

$= \dfrac{\text{LCM} \times \text{HCF}}{\text{First number}}$

$= \dfrac{864 \times 144}{288} = 432$

2. Answer: C

Explanation: LCM × HCF = 1st Number × 2nd Number

225 × 5 = 25 × x

I.e. x $= \dfrac{225 \times 5}{25} = 45$

3. Answer: C

Explanation: Given that

L.C.M. of two numbers = 1820

H.C.F. of those numbers = 26

One of the numbers is 130

I.e. Another number

$= \dfrac{1820 \times 26}{130} = 364$

4. Answer: B

Explanation: Using Rule 1,

We have,

First number × second number

= LCM × HCF

I.e. Second number

$= \dfrac{1920 \times 16}{128} = 240$

5. Answer: A

Explanation: Product of two numbers = HCF × LCM

= 12906 × 14818

= LCM × 478

LCM $= \dfrac{12906 \times 14818}{478} = 400086$

6. Answer: D

Explanation: H.C.F. of the two 2-digit numbers = 16

Hence, the numbers can be expressed as 16x and 16y, where x and y are prime to each other.

Now,

First number × second number

= H.C.F. × L.C.M.

16x × 16y = 16 × 480

xy $= \dfrac{16 \times 480}{16 \times 16}$ = 30

The possible pairs of x and y, satisfying the condition xy = 30 are:

(3, 10), (5, 6), (1, 30), (2, 15)

Since the numbers are of 2-digits each.

Hence, admissible pair is (5, 6)

Numbers are: 16 × 5 = 80

And 16 × 6 = 96

7. Answer: B

Explanation: We know that,

First number × Second number

= LCM × HCF

i.e, Second number

$= \dfrac{16 \times 160}{32} = 80$

8. Answer: B

Explanation: LCM = $\frac{\text{Product of two numbers}}{\text{HCF}}$

= $\frac{4107}{37} = 111$

Obviously, numbers are 111 and 37 which satisfy the given condition.

Hence, the greater number = 111

9. Answer: B

Explanation: First number × Second number

= HCF × LCM

i.e, Second number

= $\frac{15*300}{60} = 75$

10. Answer: C

Explanation: Let the numbers be 12x and 12y where x and y are prime to each other.

i.e, LCM = 12xy

i.e, 12xy = 924

xy = 77

i.e, Possible pairs = (1,77) and (7,11)

11. Answer: C

Explanation: First number × second number

= LCM × HCF

Let the second number be x.

i.e, 10x = 30 × 5

$X = \frac{30 \times 5}{10} = 15$

12. Answer: A

Explanation: HCF × LCM = Product of two numbers

8 × LCM = 1280

LCM = $\frac{1280}{8} = 16$

13. Answer: D

Explanation: First number × second number

= HCF × LCM

24 × second number = 8 × 48

i.e, Second number = $\frac{8*48}{2} = 16$

14. Answer: B

Explanation: First number × second number

= HCF × LCM

= 84 × second number

= 12 × 336

i.e, Second number

$= \frac{12*336}{84} = 48$

15. Answer: D

Explanation: Let the numbers be 6x and 6y where x and y are prime to each other.

i.e, 6x × 6y = 216

$xy = \frac{216}{6*6} = 6$

LCM = 6xy = 6 × 6 = 36

16. Answer: A

Explanation: Second number

$= \frac{\text{LCM} \times \text{HCF}}{\text{First number}}$

$= \frac{18 \times 378}{54} = 126$

17. Answer: C

Explanation: Let the number be 15x and

15y, where x and y are co –prime.

15x × 15y = 6300

$xy = \frac{6300}{15*15} = 28$

18. Answer: D

Explanation: First number × Second number

= HCF × LCM

= 75 × Second number

= 15 × 225

Second number

$= \frac{15*225}{75} = 45$

19. Answer: A

Explanation: First number × second number

= HCF × LCM

= 52 × second number

= 4 × 520

= Second number

$= \frac{4*520}{52} = 40$

20. Answer: D

Explanation: First number × Second number

= HCF × LCM

Þ 864 × Second number

= 96 × 1296 = Second number

$= \frac{96*1296}{864} = 144$

21. Answer: B

Explanation: Let LCM be L and HCF be H, then

L = 4H

H + 4H = 125

5H = 125

$H = \frac{125}{5} = 25$

i.e., L = 4 × 25 = 100

i.e., Second number

$= \frac{L*H}{\text{First number}}$

$H = \frac{100*25}{100} = 25$

22. Answer: A

Explanation: HCF of two-prime numbers = 1

i.e, Product of numbers = their

LCM = 117

117 = 13 × 9 where 13 & 9 are co-prime.

L.C.M (13, 9) = 117

23. Answer: B

Explanation: HCF = 12

Numbers = 12x and 12y

Where x and y are prime to each other.

12x × 12y = 2160

$xy = \frac{2160}{12*12}$

= 15 = 3 × 5, 1 × 15

Possible pairs = (36, 60) and (12, 180)

24. Answer: A

Explanation: $= \dfrac{L*H}{\text{First number}}$

$H = \dfrac{27*2079}{189} = 297$

25. Answer: B

Explanation: Here, HCF = 13

Let the numbers be 13x and 13y

where x and y are Prime to each other.

Now, 13x × 13y = 2028

$xy = \dfrac{2028}{13*13} = 12$

The possible pairs are: (1, 12), (3, 4), (2, 6)

But the 2 and 6 are not co-prime.

The required no. of pairs = 2

26. Answer: B

Explanation: Let the numbers be 13x and 13y.

Where x and y are co-prime.

LCM = 13 xy

13 xy = 455

$xy = \dfrac{455}{13} = 35 = 5*7$

Numbers are 13 × 5 = 65 and 13 × 7 = 91

27. Answer: D

Explanation: HCF of two numbers is 8.

This means 8 is a factor common to both the numbers. LCM is common multiple for the two numbers, it is divisible by the two numbers.

So, the required answer = 60

28. Answer: D

Explanation: Let the numbers be 23x and 23y where x and y are co-prime.

LCM = 23 xy

As given,

23xy = 23 × 13 × 14

x = 13, y = 14

The larger number = 23y

= 23 × 14 = 322

29. Answer: D

Explanation: LCM = 2 × 2 × 2 × 3 × 5

Hence, HCF = 4, 8, 12 or 24

According to question

35 cannot be H.C.F. of 120.

30. Answer: C

Explanation: First number = 2 × 44 = 88

First number × Second number

= H.C.F. × L.C.M.

= 88 × Second number

= 44 × 264

= Second number

$= \dfrac{44*264}{88} = 132$

31. Answer: C

Explanation: Using Rule 4,

L.C.M. of 4, 6, 8, 12 and 16 = 48

Therefore, required number

= 48 + 2 = 50

32. Answer: D

Explanation: LCM of 15, 12, 20, 54 = 540

Then number = 540 + 4 = 544

[4 being remainder]

33. Answer: D

Explanation: Using Rule 4,

The greatest number of five digits is 99999.

LCM of 3, 5, 8 and 12

```
2 | 3,  5,  8,  12
2 | 3,  5,  4,  6
3 | 3,  5,  2,  3
  | 1,  5,  2,  1
```

LCM = 2 × 2 × 3 × 5 × 2 = 120

After dividing 99999 by 120, we get 39 as remainder

= 99999 − 39 = 99960

= (833 × 120)

99960 is the greatest five digit number divisible by the given divisors.

In order to get 2 as remainder in each case we will simply add 2 to 99960.

Therefore, greatest number

= 99960 + 2 = 99962

34. Answer: C

Explanation: The greatest number of five digits is 99999.

LCM of 3, 5, 8 and 12

```
= 2 | 4,  5,  6,  7,  8
  2 | 2,  5,  3,  7,  4
    | 1,  5,  3,  7,  2
```

LCM = 2 × 2 × 3 × 5 × 2 = 120

After dividing 99999 by 120, we get 39 as remainder

99999 − 39 = 99960 = (833 × 120)

99960 is the greatest five digit number divisible by the given divisors.

In order to get 2 as remainder in each case we will simply add 2 to 99960.

i.e., Greatest number = 99960 + 2 = 99962

35. Answer: D

36. Answer: B

37. Answer: C

Explanation: LCM of 21, 36 and 66

i.e, LCM = 3 × 2 × 7 × 6 × 11

= 3 × 3 × 2 × 2 × 7 × 11

Therefore, required number

= $3^2 × 2^2 × 7^2 × 11^2$

= 213444

38. Answer: A

Explanation: Here 4 − 1 = 3, 5 − 2

= 3, 6 − 3 = 3

I.e, The required number

= LCM of (4, 5, 6) − 3

= 60 − 3 = 57

39. Answer: B

Explanation: LCM of 4, 6, 10, 15 = 60

Least number of 6 digits = 100000

The least number of 6 digits which is exactly divisible by 60 = 100000 + (60 – 40) = 100020

I.e., Required number (N)

= 100020 + 2 = 100022

Hence, the sum of digits = 1 + 0 + 0 + 0 + 2 + 2 = 5

40. Answer: C

Explanation:

The LCM of 12, 18, 21, 30

2	12, 18, 21, 30
3	6, 9, 21, 15
	2, 3, 7, 5

i.e., LCM = 2 × 3 × 2 × 3 × 7 × 5 = 1260

i.e, the required number = $\frac{1260}{2} = 630$

41. Answer: D

42. Answer: B

Explanation: Required number of students

= LCM of 6, 8, 10 = 120

43. Answer: B

44. Answer: B

Explanation: Using Rule 5,

Here, 12 – 5 = 7,

16 – 9 = 7

i.e., required number

= (L.C.M. of 12 and 16) – 7

= 48 – 7 = 41

45. Answer: C

Explanation: Using Rule 5,

Here, Divisor – remainder = 1

e.g., 10 – 9 = 1, 9 – 8 = 1,

8 – 7 = 1

i.e., required number

= (L.C.M. of 10, 9, 8) –1

= 360 – 1 = 359

46. Answer: D

Explanation: We find LCM of 5, 6 and 8

5=5

6=3×2

8=23

= 2^3 ×3 × 5 = 8 × 15 = 120

Required number = 120K + 3

i.e, when K = 2, 120 × 2 + 3 = 243 required no.

It is completely divisible by 9

47. Answer: D

Explanation: LCM of 16, 18, 20 and 25 = 3600

i.e., required number = 3600K + 4 which is exactly divisible by 7 for certain value of K.

When K = 5,

Number = 3600 × 5 + 4

= 18004 which is exactly divisible by 7.

48. Answer: B

Explanation: LCM of 3, 5, 6, 8, 10 and 12

= 120

i.e, required number

= 120x + 2, which is exactly divisible by 13.

120x + 2 = 13 × 9x + 3x + 2

Clearly 3x + 2 should be divisible by 13.

For x=8,3x + 2 is divisible by 13.

i.e, required number = 120x + 2 = 120 × 8 + 2

= 960 + 2 = 962

49. Answer: D

50. Answer: B

Explanation: We will find the LCM of 16, 24, 30 and 36.

```
2 | 16,  24,  30,  36
2 |  8,  12,  15,  18
2 |  4,   6,  15,   9
3 |  2,   3,  15,   9
  |  2,   1,   5,   3
```

LCM = 2 × 2 × 2 × 3 × 2 × 5 × 3 = 720

The largest number of five digits = 99999

On dividing 99999 by 720, the remainder = 639

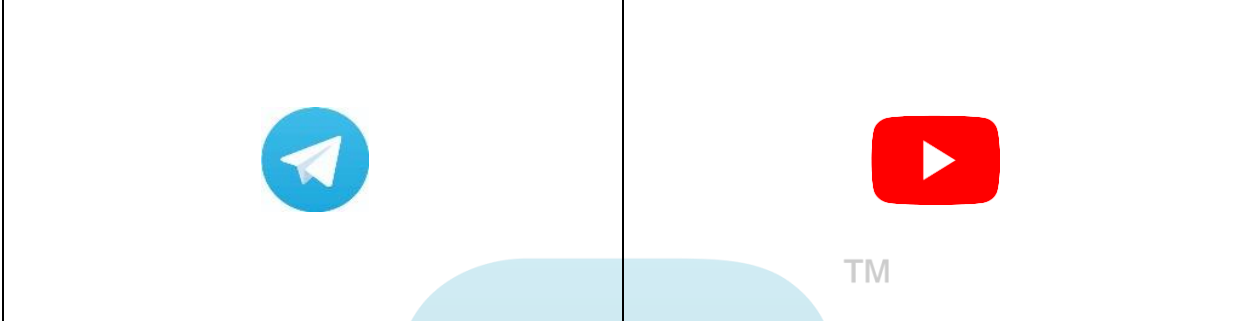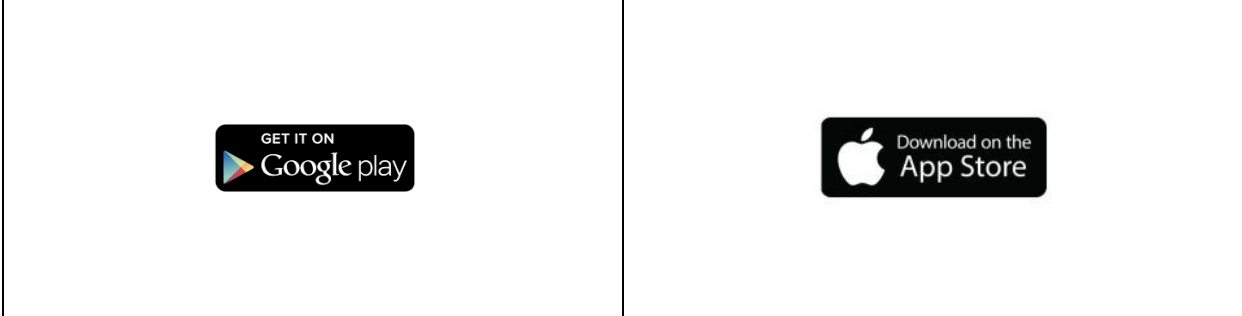The largest five-digit number divisible by 720

= 99999 – 639 = 99360

Required number = 99360 + 10 = 99370

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