HCF & LCM Solved Sums

1 . The least common multiple of 24 , 36 , and 40 is

A) 340 b) 360 c) 230 d) 400

Answer :

2	24 36 40	=> 2 X 2 X 2 X 3 X 1 X 3 X 5
2	12 18 20	=> 360
2	6 9 10	
3	3 9 5	
	1 3 5	

Ans : 360

2 . The LCM of 148 and 185 is

A) 690 b) 760 c) 740 d) 1050

Answe:

2	148 185	2X2X37X5 => 740
2	74 185	
37	37 185	
	1 5	

Ans : 740

3 . Find the LCM of 8 , 15 , 24 and 72

Answer :

2	8 15 24 72	
2	4 15 12 36	2x2X2X3X5X3 => 360
2	2 15 6 18	
3	1 15 3 9	

1 5 1 3

Answer : 360

4 . HCF of 513 and 1134 is

A) 9 b) 81 c) 27 d) 31

Answer :

1134

1026

108 | 513 | 4

432

81 | 108 | 1

81

27 | 81 | 3

81

0

[when reminder is zero,at that time divisor is HCF]

Answer : 27

5 . The HCF of 3556 and 2444 is

A) 28 b) 38 c) 43 d) 18

Answer :

3555 | 1

3444

112 | 3444 | 2

3360

84 | 112 | 1

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        84
    ----------
28 | 84   3
   |----------
   |  0
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HCF = 28

Answer : 28

6 . The LCM and HCF of two numbers are 45 and 3 respectively . their sum is 24 what is their difference ?

A) 2 , b) 4 , c) 6 d) 8

Answer :

A X B = LCM X HC

=> ab = 45 X 3 = 135 => ab =135 ---→ 1

A + b = 24 => b = 24 – a ----→ 2

Substitute 2 equ in 1equ

- ⇨ A (24 – a) = 135 => $24a - a^2 = 125$
- ⇨ $A^2 - 24a + 135$ => (a-9) (a - 15)

A = 9 B = 15 difference = 6

Answer : 6

7 . The product of two members is 4107 and their HCF is 37.The large number is

A) 185 B) 111 c) 187 d) 101

Answer :

A X B = LCM X HCF

- ⇨ 4107 = LCM X 37 $=> LCM = \frac{4107}{37} = 111$
- ⇨ a = 111 , b = 37 , (or) a = 37 , b = 111
- ⇨ Large X number = 111

Answer : 111

8 . The LCM of two numbers is 495 and their HCF is 5 . If the sum of the two numbers is 100 , then Find the differene of the numbers

A) 10 b) 46 c) 70 d) 90

Answer :

A X B = LCM X HCF

A X B = 495 X 5 => ab = 2475 ---→ 1

⇨ A + B = 100 --→ 2 = > b = 100 – 9
⇨ A X (100 – a) = 2475 = > a^2 – 100a + 2475 = 0
⇨ A = 55 (OR) a = 45
⇨ B = 100 – 55 = 45 b = 45 , a = 55

Difference = 10

Ans : 10

9 . The LCM of two numbers is 48 . The numbersare in the ratio 2 : 3 te sum of the numbers is ?

A) 35 , b) 40 , c) 60 d) 111

Answer : ratio = 2x : 3x

⇨ X | 2x 3x
2 3 => 6x = LCM

⇨ 6x = 48 x = 8

Two numbers = > 2X8 : 3X8

= > 16 : 24

= > sum = 16 + 24 = 40

Answer : 40

10 . Three numbers are in the ratio 1 : 2 : 3 and their HCF is 12 . The number are

A) 4 , 8 , 12 b) 5 , 10 , 15 c) 10 , 20 , 30 d) 12 , 24 , 36

Answer :

Ratio = 1x : 2x : 3x

⇨ Find HCF x | 1x 2x 3x
1 2 3 HCF = x

⇨ Therefor x = 12

=> Number are 1 X 12 : 2 X 12 : 3 X 12

= > 12 , 24 , 36

Ans : 12 , 24 , 36

11 . The ratio of two numbes is 3 : 4 and their HCF is 4 ther LCM is

A) 12 b) 16 c) 24 d) 48

Answer :

Ratio 3x : 4x

= > x | 3x 4x x => 4
3 4

⇨ 3 X 4 : 4 X 4

= > 12 : 16 = > Find LCM 2 | 12 , 16

= > 2 X 2 X 3 x 4 = 48 2 | 6 8

Ans : 48 3 4

12 . The the greatest number that will divide 43 , 91 , & 183 so as to leave the same remain in each care

A) 4 b) 7 c) 9 d) 13

Answer :

= > (183 – 43) , (183 – 91) , (91 – 43)

= > HCF of (140 , 92 , 48)

= > HCF of 4 | 140 92 48
35 13 12

HCF : 4

Ans : 4

13 . The greatest number of 4 digits which is divisible by 20 , 25 , 40 and 75 is

A) 9600 b) 2000 c) 9800 d) 3540

Answer :

2	20 25 40 75	
2	10 25 20 75	=> 2 X 3 X 5 X 2 X 2
5	5 25 10 75	=> LCM = 600
5	1 5 2 15	
	1 1 2 3	

⇨ Large number is 4 digit is = 9999

= > 9999/600 = 16 times reminder = 399

⇨ 9999 – 399 = 9600

Ans : 9600

14 . Find the greatest number of 4 digit which is divisible by 15 , 25 , 40 , 75

A) 900 b) 9400 c) 9600 d) 9300

Answer:

2	15 25 40 75	
2	15 25 20 75	
5	15 25 10 75	
5	3 5 2 15	
3	3 1 2 3	
	1 1 2 1	

⇨ 2 X 2 X 5 X 5 X 2 X 3

= > LCM = 600

⇨ Greatest number of 4 digit = 9999

= > 9999/600 = 16 times reminder = 399

⇨ 9999 – 399 = 9600

Ans : 9600

15 . The greatest number of 4 digit which is divisible by 25 , 20 , 60 and 100 is

A) 2000 b) 4000 c) 5000 d) 2600

Answer :

2	20	25	60	100
2	10	25	30	50
5	5	25	15	25
5	1	5	3	5
	1	1	3	1

= > 2 X 2 X 3 X 5 X 5

= > LCM = 300

⇨ Find the which answer is divisible correctly

And larger 4 digit number

⇨ 6000/300 = 20 remainder = 0
Ans : 6000

16 . Find the smallest number which when diminished by 7 , is divisible by 12 , 16 , 18 ,

21 and 28 .

Answer :

2	12	16	18	21	28
2	6	8	9	21	14
2	3	4	9	21	7
3	3	2	3	7	7
7	1	2	1	7	7

1 2 1 1 1

= > 2 X 2 X 2 X 2 X 3 X 7 = > 1008

= > 1008 + 7 = 1015

Ans : 1015

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

A) 4 b) 10 c) 15 d) 16

Answer :

2	2	4	6	8	10	12
2	1	2	3	4	5	6
3	1	1	3	2	5	3
	1	1	1	2	5	1

= > 2 X 2 X 2 x 3 X 5

= > LCM = 120 sec

= > 120 sec = 2 min => 30/2 = 15 time

= > 15 + 1 --→ first 2 second => 15 + 1 = 16

Ans : 16

18 . Find the least common multiple of 4/5 , 3/10 , and 7/15

A) 84/5 , b) 5/84 , c) 2/15 d) 12/15

Answer :

$$\frac{LCM\ of divied}{HCF of\ dicisior}$$

⇨ LCM = 4 X 3 X 7 = 84
HCF = 5 , 10 , 15 = 5 => 84/5

Ans : 84/5

19 . The LCM of 1/3 , 5/6 , 2/9 , 4/27 , is

A) 1/59 , b) 10/27 c) 20/3 d) non of these

$$\frac{LCM\ of divied}{HCF of\ dicisior}$$

=> 2 | 1 5 2 4

1 5 1 2 => 2 X 5 X 2 = 20

⇨ HCF of 3 , 6 , 9 , 27 = > 3

Ans : 20/3

20 . Find the HCP of 4/9 , 2/5 , 6/8 , 2/5 is

A) 1/180 b) 2/481 c) 2/350 d) 1/142

Answer :

$$\frac{LCM\ of divied}{HCF of\ dicisior}$$

⇨ HCF of 4 , 2 , 6 , 2 => 2

⇨ LCM of 9 , 5 , 8 , 5

5	9	5	8	5	=> 5 X 2 X 2 X 2 X 3 X 3
2	9	1	8	1	LCM = 60
2	9	1	4	1	
3	9	1	2	1	
	3	1	2	1	

⇨ 2/360 = > 1/180

Ans : 1/180

21 . The HCF of two numbers is 8 , which one of the following can never be their LCM ?

a) 24 b) 48 c) 56 d) 60

Answer :

⇨ The HCF of two numbers is 1 , 8

⇨ This mean 8 is a factor common to both the numbers .

⇨ LCM is common multiple for the two numbers.

⇨ 24 , 48 , 56 is divided by 8

⇨ 60 not divided by 8 = > then 60 is correct

Ans : 60

22 . The product of the two numbers is 900 . If the LCM of these two numbers is 300, then

Find HCF ?

Answer :

A X B = LCM X HCF

⇨ 900 = 300 X HCF = > HCF = 3

Ans : 3

23 . The product of two co- prime number is 117 . Their least common multiple is

A) 351 b) 234 c) 39 d) 117

Answer :

[HCF of two co-prime is = 1]

= > HCf of 117 is = 1

= > The LCM is = > 117/1

Ans : 117

24 . Two numbers are in the ratio 3 : 4 and the product of their LCM and HCF is 10800. The sum of the number is

A) 180 b) 210 c) 825 d) 240

Answer :

Ratio 3x : 4x

⇨ 3x X 4x = 10800

= > $12x^2$ = 10800 = > x^2 = 10800/12

⇨ x^2 = 900 = >x= 30

= > 3 X 30 : 4 X 30 = > 90 : 120

Sum = 90 + 120 = 210

Ans : 210

25 . Three numbers are in the ratio 1 : 2 : 3 their heiher common factor is 12 . Find the numbers

A) 12 , 24 , 36 b) 4 , 48 , 72 c) 12 , 24 , 48 d) 48 , 60 , 72

Answer :

Ratio 1x : 2x :3x

Find HCF = > | 1x 2x 3x HCF = x

1 2 3

Then x = 12

⇨ Ratio 12 : 24 : 36

Ans : 12 , 24 , 36

26 . Two numbers are in the ratio of 2 : 3 and the product of their highest common factor and least multiple is 150 , then Find the sum of the number is ,

A) 5 b) 10 c) 20 d) 25

Answer :

Ratio 2x : 2x

⇨ 2x X 3x = 150

= > $6x^2$ =150 = > x^2 = 150/6 = x^2 = 25

= > x =5

⇨ Ratio 10 : 15

= > sum 10 + 15 = 25

Ans : 25

27 . Find The least number which when divided by 5 , 6 , 7 and 8 leaving a remainders 3 but when divided by 9 leaves no remainders ?

Answer :

⇨ Finf LCM of 5 , 6 , 7 and 8

= > 5 x 6 X 7 X 8 = 840

= > 840 + 3 = 843

= > 843 is divided by 9 or not ,

8 + 4 + 3 = 15 = > 15/9 = remainder = 1

843 is not divided by 9

= > 840 X 2 X 3 => 1683

= > 1683 X 2 + 3 = > 1683

= > 1683 is divided by 9 or not ,

1 + 6 + 8 + 3 = 18 => 18/9 = reminder = 0

1683 is divided by 9

⇨ Then 1683 is correct ans

Ans : 1683 .

28 . The greatest number that will divide 137 , 182 1nd 482 leaving a remainder 2 in each case is

422 leaving a remainder 2 in each case is

A) 15 b) 21 c) 12 d) 22

Answer :

= > 137 – 2 , 182 – 2 , 422 – 2

= > 135 180 420

⇨ Then find the HCF of 135 , 180 , 420

3	135	180	420	= > HCF = 3 X 5
5	45	60	140	HCF = 15
	9	12	28	

Ans : 15

29 . The greatest number which of dividing 1657 and 2032 leaves remainders 6 and 5 respectively .

Answer :

= > 1657 – 6 = 1651

= > 2037 – 5 = 2032

⇨ The find HCF of 2032 , 1651

1651 | 2032 | 1
1651
381 | 1651 | 4
1524
127 | 381 | 3
381
0

HCF = 127

Ans : 127

30 . What is the largest number by which when 2109,2790 and 3471 divided then 1 , 2 , 3 are obtained as remainder respectively ?

A) 48 b) 68 c) 38 d) 86

Answer :

= > 2109 – 1 = 2108

= > 2790 – 2 = 2788

= > 3471 – 3 = 3468

⇨ Find the HCF of 2105 , 2788 , 3468

2788 | 3468 | 1
2788
680 | 2788 | 4
2720

2108 | 2788 | 1
2108
680 | 2108 | 2
2040
10

68	680	10
	680	
	0	

68 680

680

0

HCF = 68

HCF = 68

Ans : 68