LCM: - A common multiple is a number that is a multiple of two or more number. The common multiple of 3 and 4 are 0,2,24…. The "least common multiple (LCM)" of two number is the smallest number (not zero) that is a multiple of both.

LCM

1) 4, 8, 12
   a) 24   b) 25
   c) 23   d) 26

2) 10, 20, 30
   a) 67   b) 63
   c) 60   d) 65

3) 24, 32, 48
   a) 94   b) 92
   c) 96   d) 99

4) 12, 15, 20
   a) 60   b) 80
   c) 90   d) 50

HCF (G.C.D)

The largest number that is a factor a whole number that divides exactly into another number with no remainder of all the numbers you are finding the HCF.

1) Find the HCF of 24, 36.
   a) 17   b) 12
   c) 13   d) 18

2) Find HCF of 1782, 420
   a) 7   b) 9
   c) 4   d) 6

3) 10997, 14139
   a) 1157   b) 1571
   c) 1657   d) 1675

4) 62, 186, 279
   a) 31   b) 34
   c) 54   d) 45

Note: - Solving HCF

1) Divide the larger number by smaller one to obtain remainder.
2) If the remainder is zero, the divisor is the required HCF.
3) If not, then take this remainder as a divisor and the first divisor as the dividend.
4) Repeat the process till zero is obtained as a remainder the last divisor is required HCF.
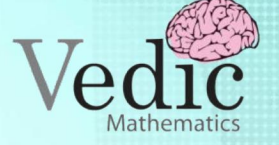
Some important results

1) HCF × LCM = Product of the numbers.

2) LCM = $\dfrac{Product\ of\ the\ numbers}{HCF}$

3) HCF of fractions = $\dfrac{HCF\ of\ numerators}{LCM\ of\ denominators}$

4) LCM of fractions = $\dfrac{LCM\ of\ numerators}{HCF\ of\ denominators}$

1. Find HCF and LCM of $\dfrac{2}{3}, \dfrac{8}{9}, \dfrac{16}{81}\ and\ \dfrac{10}{27}$

   a) HCF of fraction = $\dfrac{2}{81}$

      LCM of fraction = $\dfrac{80}{3}$

   b) HCF of fraction = $\dfrac{7}{81}$

      LCM of fraction = $\dfrac{89}{3}$

   c) HCF of fraction = $\dfrac{5}{81}$

      LCM of fraction = $\dfrac{82}{3}$

   d) HCF of fraction = $\dfrac{9}{81}$

      LCM of fraction = $\dfrac{81}{3}$

2. Find the HCF and LCM of 0.63, 1.05, & 2.1

   a) HCF = 0.11, LCM = 6.10

   b) HCF = 0.31, LCM = 6.80

   c) HCF = 0.21, LCM = 6.30

   d) HCF = 0.91, LCM = 6.50

Model 1 : Find HCF

1) Find the greatest possible length which can be used to measure exactly lengths 4m 95cm, 9m and 16m 65cm.

   a) 45   b) 46

   c) 44   d) 47

2) Determine the largest tape which can be used to measure exactly the length of 7m, 3m 85cm and 12m 95cm

   a) 54   b) 36

   c) 35   d) 45

3) Find the greatest number which can on dividing 1657 and 2037 leaves remainder 6 and 5 respectively.

   a) 125   b) 127

   c) 123   d) 122

4) 84 Maths books, 90 Physics books and 120 Chemistry books must be stacked topic-wise. How many books will be there in each stack so that each stack will have the same height too?

a) 21   b) 18   c) 12   d) 6

5) Find the greatest number that divide 87, 143 and 227 so as to leave the some remainder in each case.

  a) 29   b) 20
  c) 26   d) 28

Model 2 : Find LCM

1) The least number, which is a perfect square and is divisible by each of the numbers 16, 20 and 24, is

a) 14400   b) 6400
c) 3600   d) 1600

2) The traffic lights at three different road crossings change after 24 seconds, 36 seconds and 54 seconds respectively. If they all change simultaneously at 10 : 15 : 00 AM, then at what time will they again change simultaneously?

a) 10 : 22 : 12 AM
b) 10 : 17 : 02 AM
c) 10 : 18 : 36 AM
d) 10 : 16 : 54 AM

3) 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) 46 minutes 12 seconds
b) 45 minutes
c) 42 minutes 36 seconds
d) 26 minutes 18 seconds

4) Three bells ring at intervals of 36 seconds, 40 seconds, and 48 seconds respectively. They start ringing together at a particular time. They will ring together after every

a) 24 minutes   b) 18 minutes
c) 12 minutes   d) 6 minutes

5) Four bells toll at intervals 4, 7, 12 and 84 Seconds. The bell toll together at 5 'O' clock. Find how many times the bell toll together in 28 minutes and at what interval they toll together?

  a) 40   b) 20
  c) 60   d) 30

Model 3 : Basic Formula

1) The LCM of two numbers is 1920 and their HCF is 16. If one of the numbers is 128, find the other number.
a) 240   b) 204   c) 320   d) 260

2) The HCF of two numbers is 15 and their LCM is 300. If one of the number is 60, the other is :
a) 75   b) 50   c) 100   d) 65

3) 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) 299   b) 276   c) 322   d) 345

4) 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) 91   b) 78   c) 117   d) 104

Model 4 : Addition & Pairs

1) The sum of the H.C.F. and L.C.M of two numbers is 680 and the L.C.M. is 84 times the H.C.F. If one of the number is 56, the other is :
a) 84   b) 8   c) 12   d) 96

2) A number between 1000 and 2000 which when divided by 30, 36 and 80 gives a remainder 11 in each case is
a) 1451   b) 1712 c) 1641   d) 1523

3) The sum of a pair of positive integers is 336 and their H.C.F. is 21. The number of such possible pairs is
a) 2   b) 4   c) 3   d) 5

4) HCF and LCM of two numbers are 7 and 140 respectively. If the numbers are between 20 and 45, the sum of the numbers is :
a) 70 b) 63 c) 77 d) 56

Model 5 : HCF & LCM Ratio

1) The ratio of two numbers is 4 : 5 and their L.C.M. is 120. The numbers are
a) 24, 30   b) 30, 40
c) 40, 32   d) 36, 20

2) Three numbers are in the ratio 2 : 3 : 4 and their H.C.F. is 12. The L.C.M. of the numbers is
a) 96   b) 144   c) 192   d) 72

3) Two numbers are in the ratio 3 : 4. If their LCM is 240, the smaller of the two number is
a) 60   b) 100   c) 80   d) 50
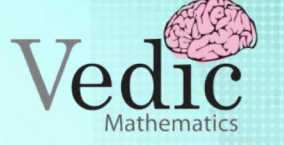
4) The LCM of two numbers is 48. The numbers are in the ratio 2 : 3. The sum of the numbers is

a) 40   b) 28   c) 32   d) 64

5) Two numbers are in the ratio 3 : 4. Their L.C.M. is 84. The greater number is

a) 28   b) 21   c) 24   d) 84