

## LCM and HCF

Ques 1.

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

Ans 1. L.C.M of 2, 4, 6, 8, 10 and 12 is 120.

so, the bells will toll together after 120 seconds i.e. 2 minutes .

In 30 minutes the bells toll together  $30/2 + 1$  times i.e. times.

Ques 2.

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

Ans 2. Product of two number s = product of their H.C.F. and L.C.M. required number =  $11 \times$

$$7700/275 = 308$$

Ques 3.

A gardener had a number of shrubs to plant in rows . At first he tried to plant 8, then 12 and then 16 in a row but he always had 3 shrubs left with him . On trying 7 shrubs he was left with none. Find the total number of shrubs.

Ans 3. L.C.M of 8,12,16 = 48 Now,  $48 \times 1 + 3 = 51$  - not divisible by 7  $48 \times 2 + 3 = 99$  - not divisible by 7  $48 \times 3 + 3 = 147$  - not divisible by 7 Required number = 147

Ques 4.

Three measuring rods are 64 cm, 80 cm and 96 cm in length . What is the least length of cloth that can be measured exact number of times using any one of these rods?

(a) 9.60 m

(b) 8 m

(c) 9.60 cm

(d) 96 m

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Ques 5.

The sum of two numbers is 528 and their H.C.F is 33. What is the number of pairs of such numbers

?

(a) 4

(b) 12

(c) 8

(d) 6 Ans 5. 4

Hint : Let the number be  $33x$  and  $33y$  where  $x$  and  $y$  are co-prime.

Ques 6.

The largest numbers which divides 30, 78 and 102 to leave the same remainder in each case is

(a) 24

(b) 20

(c) 8

(d) 16

Ans 6. 24

Ques 7.

Find the least number of five digits which is exactly divisible by 12, 15 and 18.

(a) 1080

(b) 10080

(c) 10025

(d) 11080

Ans 7.10080

Hint : The least number of 5 digits is 10000. L.C.M. of 12, 15 and 18 is 180 . On dividing 10000 is 100.

=>  $10000 + 180 - 100 = 10080$  is divisible by 180.

Ques 8.

The smallest number which when divided by 20, 25, 35 and 40 leaves a remainder of 14, 19, 29 and 34 respectively is

(a) 1994

(b) 1494

(c) 1394

(d) 1496

Ans8.1394

Hint: Note that  $20 - 4 = 6$ ;  $25 - 19 = 6$ ;  $35 - 29 = 6$ ;  $40 - 34 =$

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6 Required number = L.C.M. of ( 20,

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Sum of last three numbers = 15

The average of 1st two numbers =  $\frac{45-15}{2} = \frac{30}{2} = 15$ .

Ques 4. A certain company employed 600 men and 400 women and the average wage was 2.55 per hour. If a woman got 50 paise less than a man, what were their wages per hour ?

(a) Man rs 3.00, Woman Rs 2.50

(b) Man Rs 3.50, Woman Rs 3.00

(c) Man Rs 2.75, Woman Rs 2.25

(d) Man Rs 3.25, Woman Rs 2.75

Ans 4. Man = Rs 2.75, woman = Rs 2.25

Ques 5. A man went uphill with a speed of 20 km.p.h. and came downhill with a speed of 30 km p.h.

The average speed for his journey was

(a) 25 km. p.h.

(b)  $22 \frac{1}{2}$  km. p.h.

(c) 24 km. p.h.

(d) 25 1/2 km. p.h.

Ans 5. 24 km.p.h.

2x4

kM' homy. - -fQues

6.A ship sails out to a mark at the rate of 10 km per hour and sails back at th rate of 15 km per hour. What is its average rate of sailing?

(a) 10 km. p.h.

(b) 12 km. p.h.

(c) 15 km. p.h.

(d) 11 km. p.h.

Ans 6. 12 km. p.h.

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Ques 7.One third of a certain jaurney was covered at a rate of 25 km per hour, one fourth at the rate of 30 km per hour and the rest at the rate of 50 km per hour. The average speed for the whole journey is

(a) 33 1/3 km/hr

(b) 66 1/3 km/hr

(c) 36 1/6 km/hr

(d) 63 1/3 km/hr Ans 7.

Ques 8.Monica's average expenses for 4 days is Rs 6.0. She spent Rs 7.70 on first day, Rs 6.30 on second day. If she spent 10 on third day , How much did she spend on the 4th day?

(a) Rs 2

(b) Rs 3

(c) Rs 4

(d) Rs 0 Ans 8. Rs 0

Hint : Required Amount = 24 - ( 7.70 + 6.30 + 10)

Ques 9.The average age of A and B is 20 years. If C were to replace A, the average would be 19 and id C were to replace B,the average would be 21 . The ages of A, B and C are (in years)

(a) 22, 17, 16

(b) 22, 18, 20

(c) 30, 18, 15

(d) 23, 17, 15 Ans 9. 22, 18, 20 Hint :  $A + B = 2 \times 20$   $C + B = 2 \times 19$

$A + C = 2 \times 21$

Ques 10. The average age of a board of 8 trustees remains the same as it was 3 years ago, when one of them is replaced by a new member. The new member is younger than the trustee in whose place he has been replaced by