

1. There are 2 numbers such that  $a > b$ ,  $\text{HCF}(a, b) = h$  and  $\text{LCM}(a, b) = l$ . What is the LCM of  $a - b$  and  $b$ ? (Capegemini)

1.  $l$
2.  $(a - b)b$
3.  $(a - b)b / h$
4.  $h(a - b)$

Ans. 3

Hint: Product of 2 numbers =  $\text{LCM} \times \text{HCF}$ .

Given  $a > b$ ,  $\text{HCF} = h$ ,  $\text{LCM} = l$  From the above we can say,  $\text{HCF}$  of  $(a - b, b) = h$

$\text{LCM} \times \text{HCF} = \text{Product of 2 numbers}$   $(a - b)b = h \times \text{LCM}$

$\text{LCM} = (a - b)b / h$

2. How many factors of the number  $28 * 36 * 54 * 105$  are multiples of 120? (Infosys)

1. 540
2. 660
3. 594
4. 792

Ans. 3

Hint :  $2^{13} * 3^6 * 5^9 = 2^3 * 3 * 5 * K$

$\Rightarrow K = 2^{10} * 3^5 * 5^8$ .

3. What is the remainder when we divide  $3^{90} + 5^{90}$  by 34? (Tech Mahindra)

1. 0
2. 17
3. 33
4. 1

Ans 1

Hint: Any number of the form  $an + bn$  is a multiple of  $(a + b)$  whenever  $n$  is odd.

4. How many factors of  $2^5 * 3^6 * 5^2$  are perfect squares? (Capegemini)

1. 18
2. 24
3. 36
4. 8

Ans. 2

Hint: Any factor of this number should be of the form  $2^5 * 3^6 * 5^2$ .

For the factor to be a perfect square  $a, b, c$  have to be even.

$a$  can take values 0, 2, 4.  $b$  can take values 0, 2, 4, 6 and  $c$  can take values 0, 2

5. Ram earns an interest of 600 over two years on a simple interest basis. On a compound interest basis, at the same interest rate, he would earn Rs. 630. What is the rate of interest? (Infosys)

1. 5%
2. 20%
3. 30%
4. 10%

Ans 4

Hint Now, for CI we calculate interest on interest earned in previous time periods, whereas SI is computed purely on the principal invested. So, CI for second year is  $630 - 300 = 330$  and Rs30 is the interest earned on interest of 300 which amounts to 10%. Therefore, rate of interest = 10%.

6. A man spends 35% of his income on food, 25% on children's education and 80% of the remaining on house rent. What percent of his income he is left with ? (TCS)

- 1) 6 %
- 2) 8 %
- 3) 10 %
- 4) 12 %

Ans 2

Hint Basic percentage concept

7. By selling 45 lemons for Rs 40, a man loses 20%. How many should he sell for Rs 24 to gain 20% in the transaction ? (Infosys)

- 1) 16
- 2) 18
- 3) 20
- 4) 22

Ans. 2

Hint Let S.P. of 45 lemons be Rs. x.

Then,  $80 : 40 = 120 : x$  or  $x = 40 \times 120 / 80 = 60$  For Rs.60, lemons sold = 45

For Rs.24, lemons sold  $= 45 / 60 \times 24 = 18$ .

8. A and B invests Rs.8000 and Rs.9000 in a business. After 4 months, A withdraws half of his capital and 2 months later, B withdraws one-third of his capital. In what ratio should they share the profits at the end of the year (Wipro)

- 1) 21:29
- 2) 41:54
- 3) 32:45

4) 37:51

Ans. Basic partnership

9. A and B can do a piece of work in 30 days, while B and C can do the same work in 24 days and C and A in 20 days. They all work together for 10 days when B and C leave. How many days more will A take to finish the work? (TCS)

1) 18 days

2) 24 days

3) 30 days

4) 36 days

Ans 1

Hint basic time and work

10. A thief is noticed by a policeman from a distance of 200 m. The thief starts running and the policeman chases him. The thief and the policeman run at the rate of 10 km and 11 km per hour respectively. What is the distance between them after 6 minutes? (Wipro)

1) 100 m

2) 150 m

3) 190 m

4) 200 m

Ans 1

Hint Relative speed of the thief and policeman =  $(11 - 10) \text{ km/hr} = 1 \text{ km/hr}$

Distance covered in 6 minutes =  $(1/60) \times 6 \text{ km} = 1/10 \text{ km} = 100 \text{ m}$

Therefore, Distance between the thief and policeman =  $(200 - 100) \text{ m} = 100 \text{ m}$ .

11. A fill pipe can fill a tank in 20 hours, a drain pipe can drain a tank in 30 hours. If a system of  $n$  pipes (fill pipes and drain pipes put together) can fill the tank in exactly 5 hours, which of the following are possible values of  $n$  (More than one option could be correct)? (Capegemini)

1) 32

2) 54

3) 29

4) 40

1. 1 and 2 only

2. 1 and 3 only

3. 2 and 4 only

4. 2 and 3 only

Ans 4

Hint 2 fill pipes cancel out 3 drain pipes. Plus, you need an additional 4 fill pipes fill the tank in 5 hours. so the answer has to be  $5k + 4$ . Both 54 and 29 are possible.

12. A man reaches his office 20 min late, if he walks from his home at 3 km per hour and reaches 30 min early if he walks 4 km per hour. How far is his office from his house ? (TCS)

- 1) 20 km
- 2) 16 km
- 3) 14 km
- 4) 10 km

Ans 4

Hint Let distance = x km.

Time taken at 3 kmph :  $\text{dist/speed} = x/3 = 20 \text{ min late}$ . time taken at 4 kmph :  $x/4 = 30 \text{ min earlier}$

difference between time taken :  $30 - (-20) = 50 \text{ mins} = 50/60 \text{ hours}$ .

$$x/3 - x/4 = 50/60$$

$$x/12 = 5/6$$

$$x = 10 \text{ km.}$$

13. A man walking at the rate of 5 km/hr crosses a bridge in 15 minutes. The length of the bridge (in metres) is(TCS)

- 1) 600
- 2) 750
- 3) 1000
- 4) 1250

Ans 4

Hint  $D = S \times T$

14. In a competitive exam, the number of passed students was four times the number of failed students. If there had been 35 fewer appeared students and 9 more had failed, the ratio of passed and failed students would have been 2 : 1, then the total number of students appeared for the exam ? (Capegemini)

- 1) 175
- 2) 165
- 3) 155
- 4) 145

Ans 3

Hint  $\Rightarrow$  Number of passed students =  $4x$  So total number of students was  $5x$

If total number of students be  $5x - 35$

$$\Rightarrow 4x - 35 - 9/x + 9 = 2/1 \Rightarrow 4x - 44 = 2(x + 9) \Rightarrow 4x - 2x = 18 + 44 \Rightarrow x = 31 \text{ Total number} = 31 \times 5 = 155$$

15. Find the value of F

TWO + TWO + TWO + TWO = FOUR (Infosys)

1) 5

2) 6

3) 8

4) None of these

Ans.4

Hint Basic crypt rules