Q1. There are three vessels each of 20 litre capacity is filled with the mixture of milk and water. The ratio of milk and water are 2:3, 3:4 and 4:5 respectively. All the vessels are emptied into fourth vessel, then find the ratio of milk and water in the final mixture. [TechM, Accenture, level 2]
A. 401/543 B. 401/544 C. 401/545 D. 401/546
Ans: B
Solution:
Milk = 2/5 + 3/7 + 4/9 and water = 3/5 + 4/7 + 5/9 so ratio will be 401/544

Q2. A tap can fill a tank in 16 min and another can empty it in 8min. If the tank is already half filled and both the taps are opened together, the tank will be empty?
[Infosys, TechM, Level 2]
A. filled in 12min B. emptied in 12min C. filled in 8min D. emptied in 8 min
Ans: D
Solution:
Let the total work = LCM (16, 8) = 16 units
1 min work of tap A = 16/16 = 1
1 min work of emptying tap = -16/2 = -2 units
So, if both opened together then their 1 min work = -1
So, they both together will empty the half of the tank in 8/1 = 8 min.

Q3. A and B can do a piece of work in 72days, B and C can do it in 120 days, A and C can do it in 90 days. In what time can A alone do it? [level 2, Infosys, TCS]
A. 80days B. 100days C. 120days D. 150days
Ans: C
Solution:
Let the total work = LCM (72, 120, 90) = 360 units
1 day work of A and B = 360/72 = 5
1 day work of B and C = 360/120 = 3
1 day work of A and C = 360/90 = 4
1 day work of A, B, and C = (5 + 3 + 4)/ 2 = 6
1 day work of A = 6 - 3 = 3
Time taken by A = 360/3 = 120 days

Q4: If 70% of students in a school are boys and the number of girls is 504, the number of boys is
[level 1, Accenture]
a. 1680 b. 1176 c. 1000 d. 2160
Ans: b
Soln:30% = 504
So, 70% = 1176

Q5. A group of P friends decided to buy a cricket bat, for which they agreed to contribute an average of Rs Q each. Of the R friends who agreed to pay an average of Rs S each, nobody sent their contribution. Which of the following expressions represents the percentage of the contribution money to that of the cost of cricket bat? [Level 2, TCS]

a. 100 PQ/RS b.100 RS/PQ c. 100 RQ-100RS/PQ d. 100-100[RS/PQ]

Ans: d

Total amount to be contributed = PQ
Actual amount contributed = PQ – RS
Required percentage = [(PQ – RS)/PQ] x 100

Q6. A reduction of 10% in the price of salt enables a person to buy 2 kg more for Rs.180. Find the reduced and the original price per kg of salt respectively. [Level 3, Infosys]
(a) Rs 10, Rs 9
(b) Rs 9, Rs 10
(c) Rs 18, Rs 20
(d) Rs 20, Rs 18
(e) Rs 18, Rs 16.2
Ans: b
Let originally he buy X kg for Rs. 180
Now, he will buy X+2 kg for Rs. 180.
Reduction in original price =10%
(180/X)/kg*90/100 = [180/(X+2)]/kg
90(X+2) = 100X
X = 18
Therefore, Originally he bought 18kg.
Original Price = Rs. 10/kg
Reduced Price = Rs. 9/kg

Q7. Train A left station T at 3:30 p.m. and traveled on straight tracks at a constant speed of 60 miles per hour. Train B left station T on adjacent straight tracks in the same direction that train A traveled on. Train B left station T 40 minutes after train A, and traveled at a constant speed of 75 miles per hour. Train B overtook train A on these straight tracks. At what time did train B overtake train A?
[Level 2, TCS]
A. 4:10 B. 5:40 C. 6:10 D. 6:50
Ans: D
Solution:
Relative Speed = 75 - 60 = 15 miles per hour
Time Difference = 40 minutes = 40/60 = 2/3 hours
Headstart of Train A = Speed x Time = 60*(2/3) = 40 Miles
Time to bridge gap of 40 miles = Relative Distance / Relative Speed = 40/15 = 2 hours and 40 minutes after B started

i.e. 3:30 pm + 40 minutes + 2 hours 40 minutes = 6:50 PM

Q8. A tank is filled by three pipes with uniform flow. The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by the third pipe alone. The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe. The time required by the first pipe is: [Level 2, Infosys]
A. 6 hours B. 10 hours C. 15 hours D. 30 hours
Ans: C
Solution:
Suppose, first pipe alone takes x hours to fill the tank.
Then, Second and third pipes will take (x - 5) and (x - 9) hours respectively to fill the tank.
$\therefore 1/x+1/(x-5)=1/(x-9)$
$\Rightarrow (x-5+x)/[x(x-5)]=1/(x-9)$
$\Rightarrow (2x-5)(x-9)=x(x-5$
$\Rightarrow x=15$[neglecting x=3]

Q9. In a race of 1200 m, Ram can beat Shyam by 200 m or by 20 sec. What must be the speed of Ram? [Level 2, Accenture]

1) 14 m/sec 2) 12 m/sec 3) 10 m/sec 4) 16 m/sec

Ans: 2

Solution

Ram beats Shyam by 200 m or 20 sec.

This means Shyam covers a 200 m distance in 20 sec.

Speed of Shyam = 200/20 = 10 m/sec

Also, in the 1200 m race, Ram beats Shyam by 200 m.

Distance covered by Ram = 1200 m

Distance covered by Shyam in same time = 1000 m

Now, the 1000 m distance is covered by Shyam with a speed of 10 m/sec in = 1000/10 = 100 seconds

So, 1200 m distance is covered by Ram in 100 seconds.

Speed of Ram = 1200/100 = 12 m/sec

Q10. The ages of Raju and Biju are in the ratio 3:1. Fifteen years hence, the ratio will be 2:1. Their present ages are: [Level 2, Wipro]

A. 30yrs, 10yrs B. 45 yrs, 15yrs C. 21 yrs, 7 yrs D. 60yrs, 20yrs

Ans: B

Solution:

A/B = 3/1

(A + 15) : (B + 15) = 2 : 1

Solving we get A=45, B=15

Q11. The sum of the squares of two positive numbers is greater than their product by 28. If the ratio of the numbers 2: 3, find the numbers [level 2, Wirpo, TechM]

A. 4 and 6 B. 6 and 9 C. 8 and 12 D. None of these

Ans: A

Solution:

Let the numbers be 2x and 3x.

$\therefore (3x)^2 + (2x)^2\ 2 - 2x \times 3x = 28$

$\Rightarrow 13x^2 - 6x^2 = 28$

$\Rightarrow 7x^2 = 28$

$\Rightarrow x^2 = \frac{28}{7}; 4$

$\Rightarrow x = \sqrt{4} = 2$

$\therefore$ Numbers are : 4 and 6

Q12. A flat and a piece of land were bought by two friends Tarun and Varun respectively at prices of Rs. 2Lakh and Rs. 2.2 Lakh. The price of the flat rises by 20% every year and that of land by 10% every year. After two years, they decided to exchange their possessions. What is approx. percentage gain of the gainer? [level 2, TCS]

(a) 7.56%

(b) 6.36%

(c) 4.39%

(d) 3.36%

(e) None of these

Ans: e

After 2 years :-

Flat would be worth = 2Lakh* 1.2*1.2 = Rs. 288000
Land would be worth= 2.2Lakh*1.1*1.1 = Rs. 266200
Profit of the Gainer = Rs. 21800
Profit % of the gainer = 21800*100/266200= 8.189(approx)
Also if loss% woldd have been asked of the loser
loss% = 21800*100/288000 = 7.56 (approx.)

Q13. What is the difference between the simple interest on a principal of 500 being calculated at 5% per annum for 3 years and 4% per annum for 4 years? [Level 2, Accenture]
A. 5 B. 10 C. 20 D. 40
Ans: A
Solution:
1% = 5
4% = 20; for four years interest = 20 x 4 = 80
5% = 25; for three years interest = 25 x 3 = 75
Difference = 80 – 75 = 5

Q14. Divide 1870 into three parts in such a way that half of the first part, one-third of the second part and one-sixth of the third part are equal. [Level 2, Wipro]
A. 241, 343, 245 B. 400, 800, 670 C. 470, 640, 1160 D. None of these
Ans: D
Solution:
x/2 = y/3 = z/6
So, 3x = 2y = z
So, x : y : z = 2: 3: 6
So, x = (1870 x 2)/11 = 340
y = (1870 x 3)/11 = 510
z = (1870 x 6)/11 = 1020

Q15. If a principal P becomes Q in 2 years when interest R% is compounded half-yearly. And if the same principal P becomes Q in 2 years when interest S% is compound annually, then which of the following is true? [Level 2, Infosys]
A. R > S B. R = S C. R < S D. R £ S
Ans: C
Solution:
Q = P(1 + R/200)^4
Q = P(1 + S/100)^2
So, (1 + R/200)^4 = (1 + S/100)^2
So, (1 + R/200)^2 = (1 + S/100)
Solve it by assuming different values of R and you will get a relation.