PROFIT & LOSS

BASIC (LEVEL 1)

1. Two phones are sold for Rs. 4800 each, gaining 20% on one and loosing 20% on the other. What is the overall profit or loss percentage?
   It will be a Loss, and loss % = $(20)^2/100 = 4\%$

2. Bob buys 9 books for Rs. 100 and sells 8 for Rs. 100. What is the net profit or loss %?
   Profit /Loss % = (9-8) x 100/8
   Profit = 12.5 %

3. A merchant sold his goods for Rs. 75 at a profit percent equal to the C.P. Find the C.P.?
   S.P. = 75
   CP = (75-CP) x 100/CP
   $CP^2 = 7500 – 100CP$
   $CP^2 – 100CP+7500 = 0$
   Solving this, we get CP = Rs. 50

4. A man buys oranges at 7 for a rupee and sells at 40% profit. How many oranges does he sell for a rupee?
   (7-a) x 100/a = 40
   Solving this equation, we get a = 5

MODERATE (LEVEL 1)

5. Fresh watermelon contains 90% water and dry watermelon contains 20% water. From 20 kg of fresh watermelon, how many kg of dry watermelon can be obtained?
   20 kg of fresh watermelon will have 18 kg of water and 2 kg of pulp.
   Thus by using 2 kg of pulp we need to make dry watermelons.
   1 kg of dry watermelon needs 800 gm of pulp, thus 2.5 kg of dry watermelon can be obtained by 2 kg of pulp.

6. A milkman makes a profit of 20% on the sale of milk. If we were to add 10% water to milk, what is the new profit % assuming water is free of cost?
   Assuming CP of milk is Rs. 100
   Initially the profit is 20%, thus SP = Rs. 120
   When we add 10% water to the milk, the CP remains constant where as the SP increases by 10% that is it becomes Rs. 132.
   So, % profit is not 32%

7. On a particular day a vendor sells 70% of the mangoes and throws away 20% of the remaining mangoes; next day he sells 50% of the mangoes remaining from the first day, and throws away the rest. What percent of the mangoes does the vendor throw away?
Assuming the total number of mangoes be 100.
On day first, 70 mangoes were sold and 20% of remaining were thrown.
Next day, 50% of the remaining were thrown, which means a total of 6+12 = 18 mangoes were thrown.
Hence, 18% of the mangoes were thrown.

8. If 90% of A = 30% of B, then what percent is B greater than A?
Let A = 100, so B = 300
B is greater than A = (300-100) = 200 %

ADVANCE (LEVEL 1)

9. Let A and B be two solid spheres such that the volume of A is found to be 87.5% lower than the volume of B. The surface area of B is how much percent higher than the surface area of A?
Let the volumes of A and B is V_A and V_B respectively.
So, $V_A = V_B/8$
$4/3 \text{ pi } (R_A)^3 = 1/8[4/3 \text{ pi } (R_B)^3]$
$2R_A = R_B$

Now, we have to calculate $(S_B – S_A)/S_A \times 100$
$[(R_B)^2 – (R_A)^2]/ (R_A)^2 \times 100 = 300\%$

10. Jinni bought some cordless phones. He sold half the phones at 5% profit and remaining at Rs. 5400 each. If he lost 2.5% on the whole, what was the cost price of cordless phone?
Let the number be cordless phones be N at a cost price of P per phone.
He sold half of the phones, i.e. N/2 at 1.05P each and the remaining N/2 at Rs. 5400 each.
Total cost price = NP
Total Selling Price = 1.05NP/2 + 5400N/2
Loss % = 2.5 = [NP – (1.05NP/2 + 5400N/2)]/NP x 100

2.5NP = 100NP -105NP/2 – 270000N
270000 = 45P
P = Rs. 6000