**L & T Placement Paper**

1) Total number of boys and girls in a class is A. The total number of girls subtracted from the total number of boys is B. Now please express the portion of girls to the total strength in terms of 'A' and 'B'.

Let x denote the number of boys. Let y denote the number of girls.

A = x + y -> equation 1  
B = x - y -> equation 2

Subtracting equation 2 from equation 1 we will get y = (A - B)/2 -> equation 3

Ratio of total number of girls to the total strength will be y / x + y.

Now substituting A for x + y as per equation 1 and (A - B)/2 for y as per equation 3 we will get the answer as  
(A - B)/(2\*(A + B))

2) Find the ratio of weights of 1 gram of cotton to 1.5 gram of rubber if their densities are in the ratio of 1 : 2.

This is a very simple question. Since the ratio of weights is the question, one need not care about their densities.

Hence 1 gram of cotton : 1.5 gram of rubber will be in the ratio 1/1.5 = 2/3 (as simple as that :))

3) Ravi had got twice as much as marks as Ramu. His teacher had made him a promise that, for every mark he scores above Ramu, he would be awarded 50% of those marks as bonus. Find the ratio of his bonus marks to the total marks of Ravi and Ramu.

Lets say Ramu has got x marks.  
Then Ravi would had got 2x marks initially. But his teacher has promised a bonus of 50% of marks from the extra marks he got more than Ravi.

Hence he would be awarded x/2 marks as bonus. Total marks of Ravi = 2x + x/2 = 5x/2.

Total marks of both the students = Total marks of Ramu + Total marks of Ravi  
= x + 5x/2 = 7x/2.

Ratio of Ravi's bonus mark to the Total marks of Ravi and Ramu would be (x/2) divided by (7x/2) = 1/7.