Question 1:

$$\sum_{i=1}^{n} \frac{a_i^x}{\sum_{j=1}^{n} b_j^y c_j^z}$$

Question 2:

$$\sum_{i=0}^{n} \frac{(x^2 * y^2/z)^{1/2}}{a * b}$$

Question 3:

Write a program which calculates how much money you'll end up with if you invest an amount of money at a fixed interest rate, compounded yearly. Have the user furnish the initial amount, the number of years, and the yearly interest rate is present. Some iteration with the program might look like this:

Enter the initial amount: 3000

Enter the number of years: 10

Enter interest rate (percent per year): 5.5

At the end of ten years, you will have 5124.43 dollars

At the end of the first year you have 3000+(3000*0.055), which is 3165. At the end of the second year you have 3165+(3165*0.005), which is 3339.08. Do this as many times as there are years. Use while loop to make all the calculations.

Question 4:

Make a program to calculate the following equation:

$$x\_avg = (x_1 * x_2 * x_3 * x_4 .... x_n)^{\frac{1}{n}}$$

Get the values of x_n and n from the user.

Question 5:

Using if, else and else if try the following program. Use appropriate preprocessor headers when developing the C++ program.

$$\left(\frac{A+B}{C-D}\right)*\left(\frac{X}{Y}\right)$$

d) (((A^2+2*B^3+C)/D))/X*Y

e) $\sqrt{|A-B|}$

f) $X^{-\cos(Y)}$

Question 6:

Using if, else and else if try the following program. Use appropriate preprocessor headers when developing the C++ program.

1. Lahore
2. Karachi
3. Peshawar
4. Quetta

The programmer usually travels from Rawalpindi railway station to rest of the cities. For traveling to the following cities software engineer can select any one of the categories:

1. Rawalpindi to Lahore
    a. Executive Class
    b. Lower A/C
    c. Economy
2. Rawalpindi to Karachi
    a. Executive Class
    b. Lower A/C
    c. Economy
    d. First Class Sleeper
    e. Economy Sleeper
3. Rawalpindi to Quetta
    a. First Class Sleeper
    b. Economy Sleeper
4. Rawalpindi to Peshawar
    a. Executive Class
    b. Lower A/C
    c. Economy

User can choose any of the above mentioned choices to go to different cities. From these choices further he can choose what sort of bogie he wants. Each bogie has its own respective price. Once passenger has chosen the bogie. This price also has 15% of tax which has to be included. Define the price for different bogies and destination by yourself.

Develop a C++ program showing the total bill to be paid (including 15% tax). The program should work such that if the user selects the destination, the price should be displayed.