Curve Fitting

Fit the straight line: y = a + bx

Pseudo-code:

1. Input no. of observations
2. For i = 1 to n
   Input Xi
   Input Yi
   Next i
3. Initialize sumx = sumx2 = sumy = sumxy = 0
4. Calculate all required sum as:
5. For i = 1 to n
   sumx = sumx + Xi
   sumy = sumy + Yi
   sumx2 = sumx2 + (Xi * Xi)
   sumxy = sumxy + (Xi * Yi)
   Next i
6. Calculate the required constants as:
   b = (n * sumxy – sumx * sumy)/(n * sumx2 – sumx * sumx)
   a = (sumy – b * sumx)/n
7. Print a and b as output & display best fit equation
8. Stop

Fit the exponential model: $y = ab^x$

Pseudo-code:

1. Input no. of observations
2. For i = 1 to n
   Input Xi
   Input Yi
   Next i
3. Initialize sumx = sumx2 = sumY = sumxY = 0
4. Calculate all required sum as:
5. For i = 1 to n
   sumx = sumx + Xi
   sumY = sumY + log(Yi)
   sumx2 = sumx2 + (Xi * Xi)
   sumxY = sumxY + (Xi * log(Yi))
   Next i
6. Calculate the required constants as:
   B = (n * sumxY – sumx * sumY)/(n * sumx2 – sumx * sumx)
   A = (sumY – B * sumx)/n
   b = antilog(B)
   a = antilog(A)
7. Print a and b as output & display best fit equation
8. Stop