GenIQ: OLS Curve Fitting

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DM STAT-1 CONSULTING

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GenIQ©

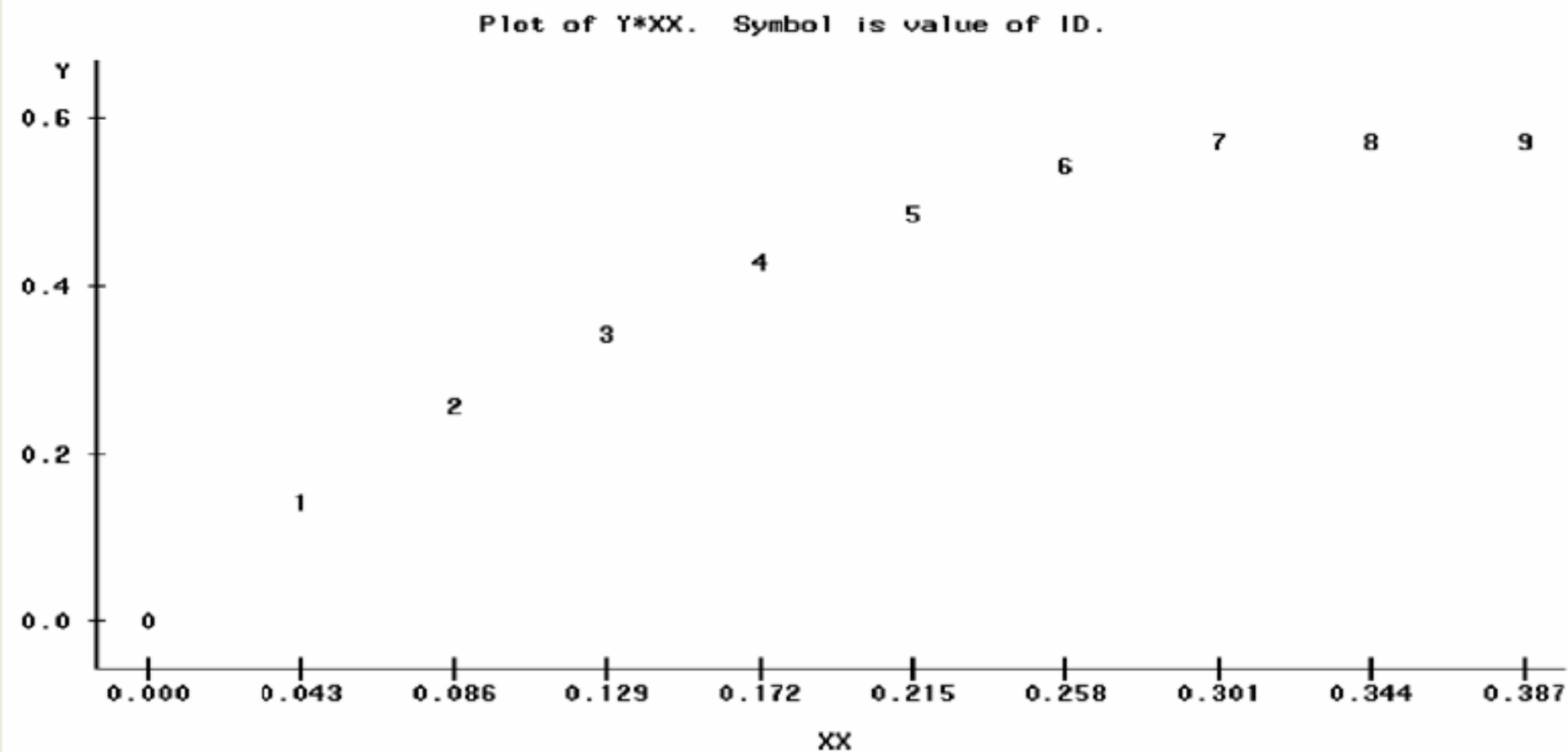# First Step (Instinct)

- Create a scatterplot of Y and XX, from Table 1.

Table 1. The Data

ID	XX	Y
0	0.000	0.000
1	0.043	0.135
2	0.086	0.252
3	0.129	0.352
4	0.172	0.434
5	0.215	0.496
6	0.258	0.538
7	0.301	0.568
8	0.344	0.580
9	0.387	0.566

First Step (Instinct)

- Scatterplot of Y and XX, from Table 1.

Plot of Y*XX. Symbol is value of ID.

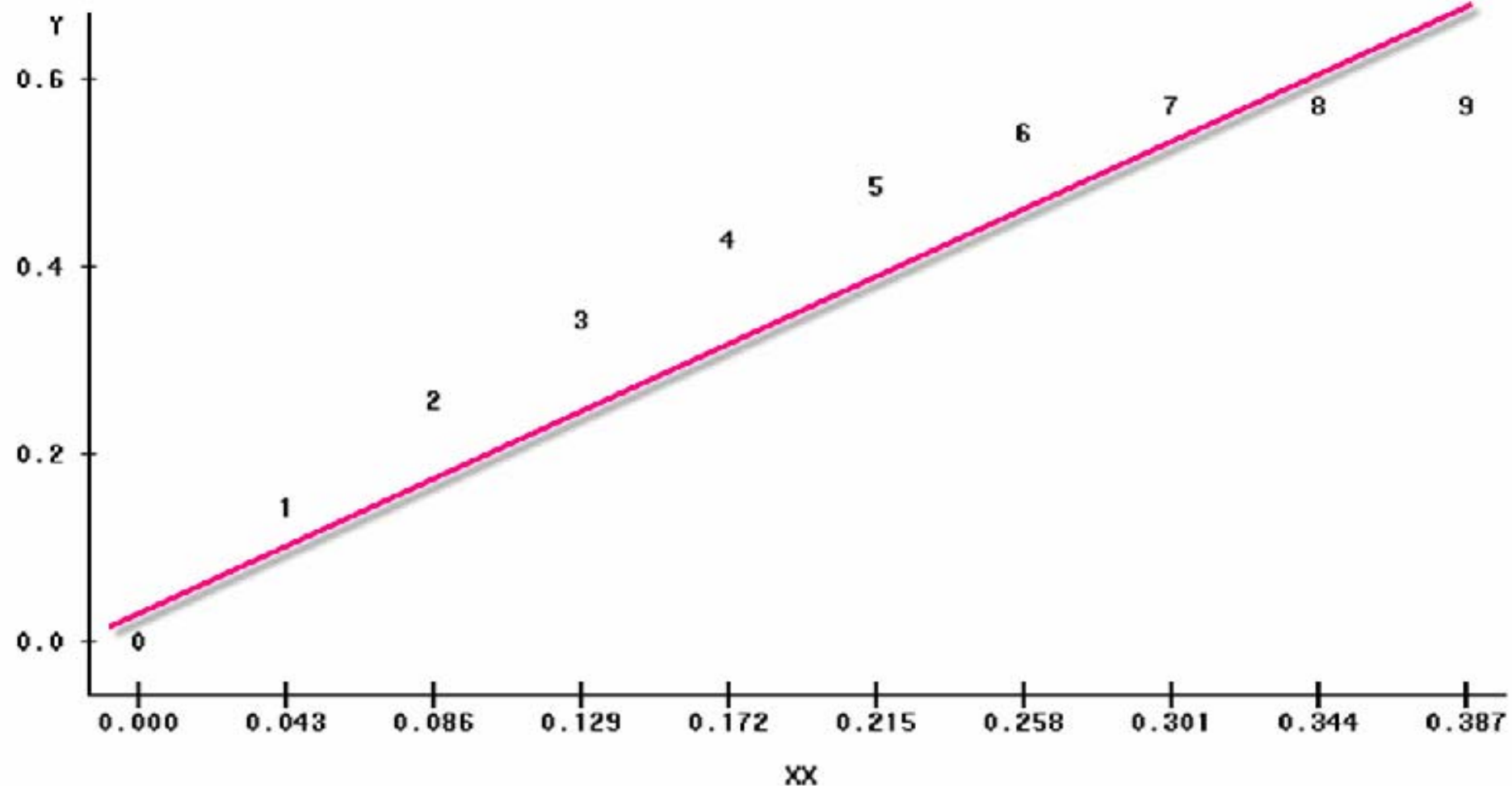# A linear relationship between Y & XX seems obvious. Correlation Coefficient: r_{linear}= 0.94021

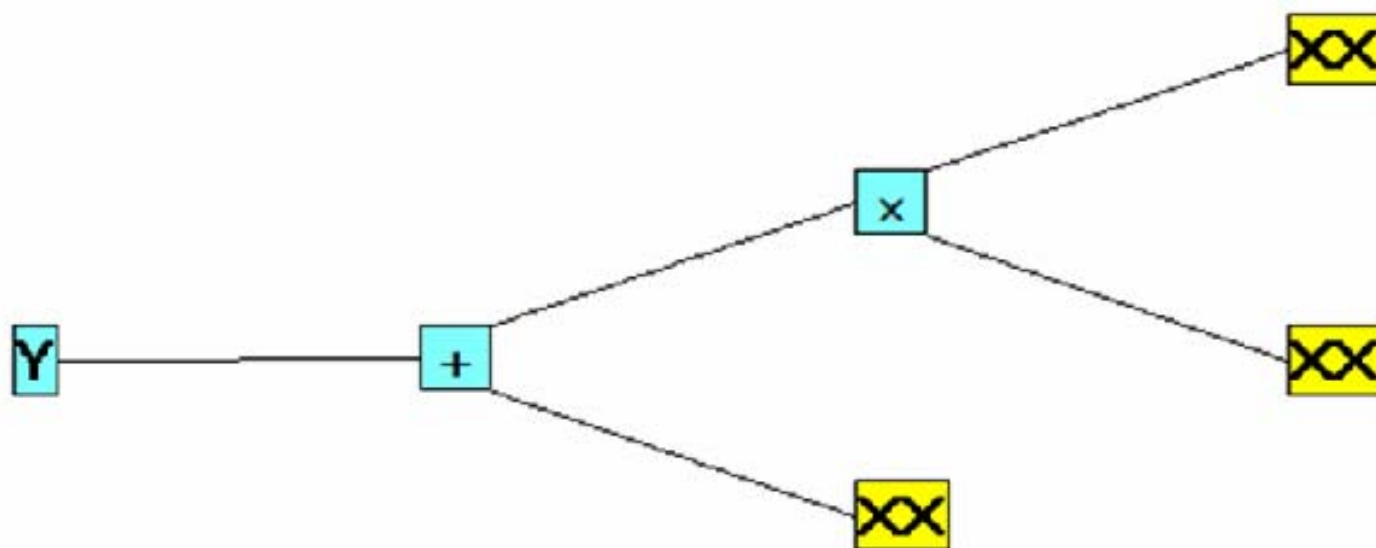
Plot of Y*XX. Symbol is value of ID.
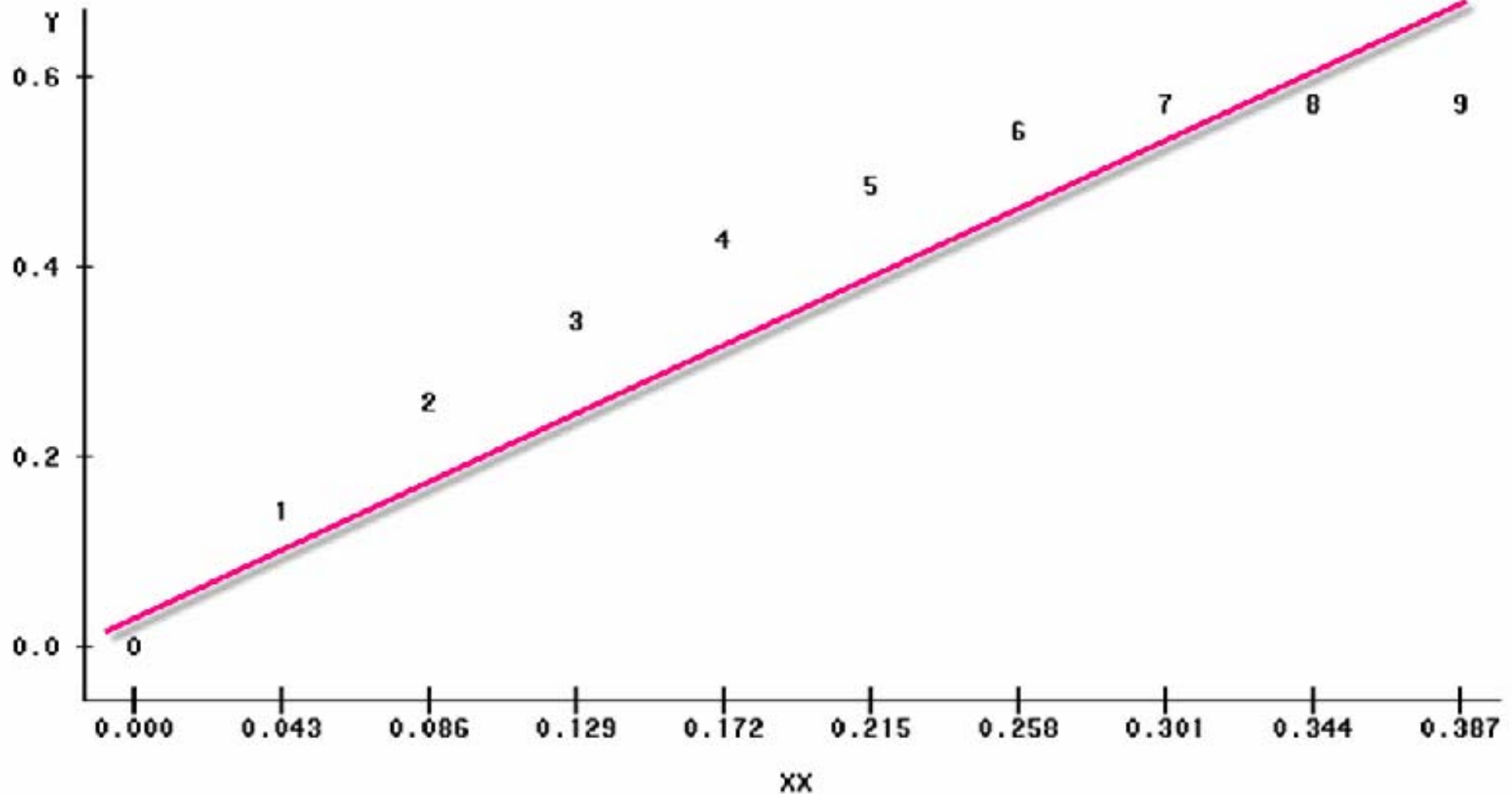
Concern over points ID=8 and ID=9!
Are the points suggesting a parabolic curve?

Plot of Y*XX. Symbol is value of ID.

Second Step: GenIQ to curve fit the points.

- **GenIQ specifies the regression model structure:**
  - ➤ **Y = XX + XX^2** , a parabola with intercept at 0.
  - ➤ **r$_{parabola}$ = 0.99995** vs. r$_{linear}$ = 0.94021

- **SAS using PROC REG estimates: Y_predicted = 3.357*XX - 4.88*XX^2**