# Math 362: Mathematical Statistics II

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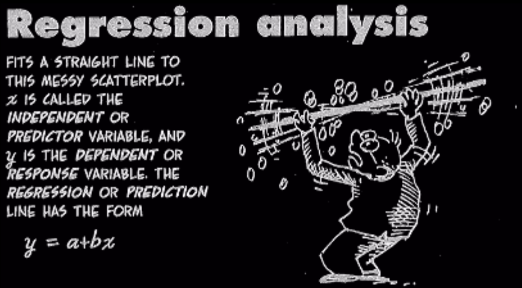
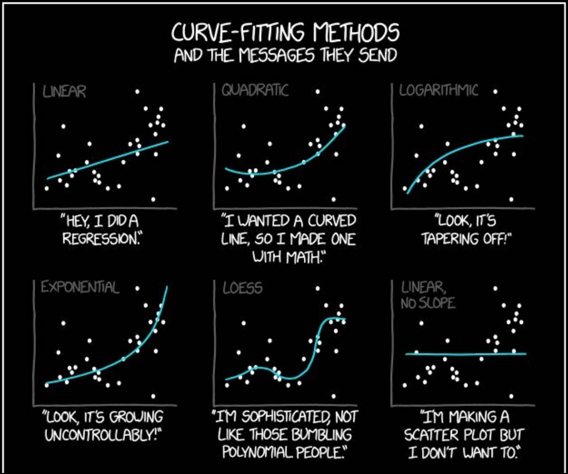
# Chapter 11. Regression




https://madhureshkumar.wordpress.com/




https://xkcd.com/

# Three ways to view the same thing

$$(x_1, y_1), \cdots, (x_n, y_n)$$

1. Purely data, no probability structure assumed.

$$(x_1, Y_1), \cdots, (x_n, Y_n)$$

2. A random sample of size $n$, where $Y_i$ follows a distribution depending on $x_i$ which is deterministic.

$$(X_1, Y_1), \cdots, (X_n, Y_n)$$

3. A random sample of size $n$, where $(X_i, Y_i)$ follow some joint distribution.