

Logistic Regression

Intuition

Logistic Regression

Linear Regression:

- **Simple:**

$$y = b_0 + b_1 * x$$

Logistic Regression

Linear Regression:

- **Simple:**

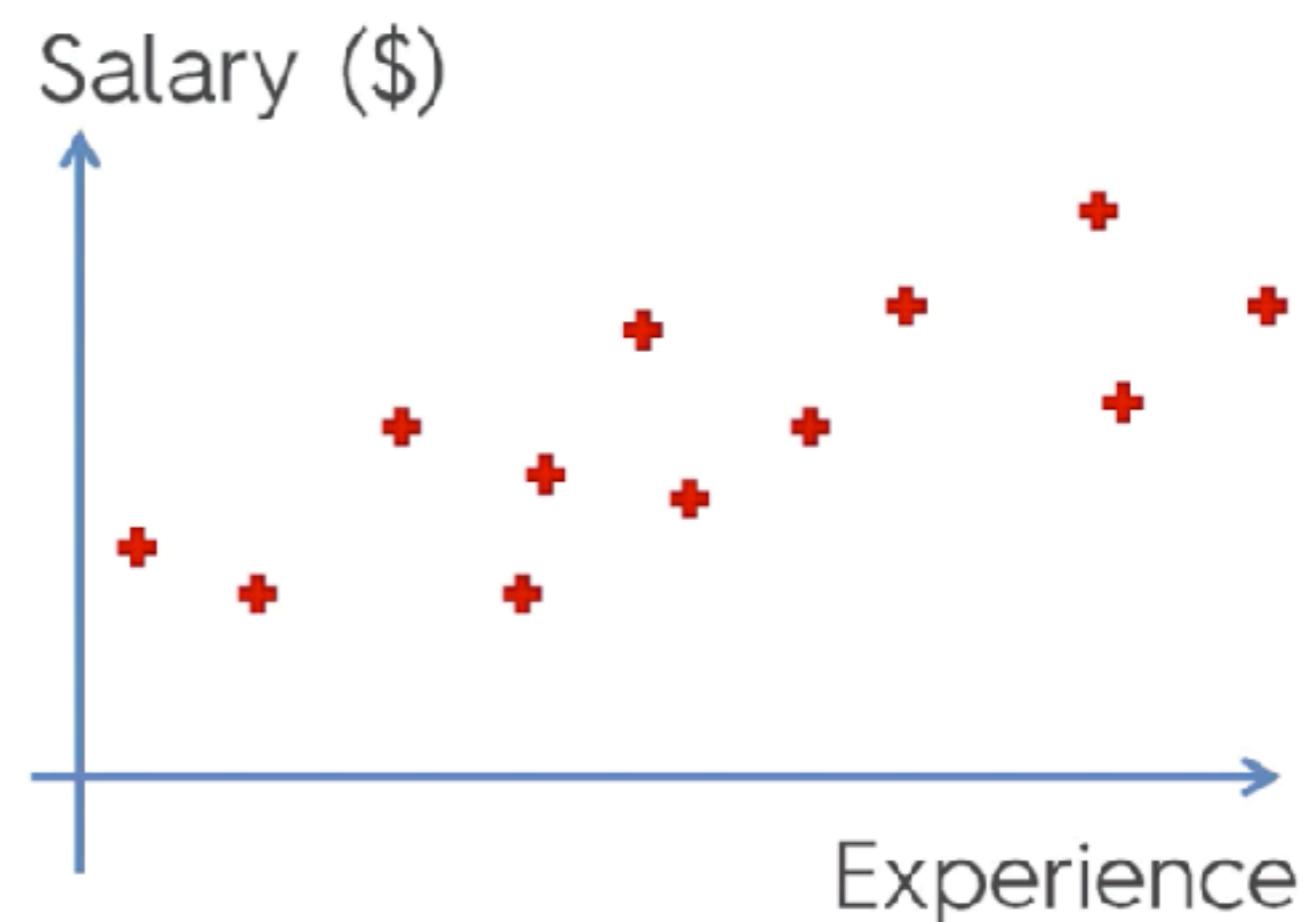
$$y = b_0 + b_1 * x$$

- **Multiple:**

$$y = b_0 + b_1 * x_1 + \dots + b_n * x_n$$

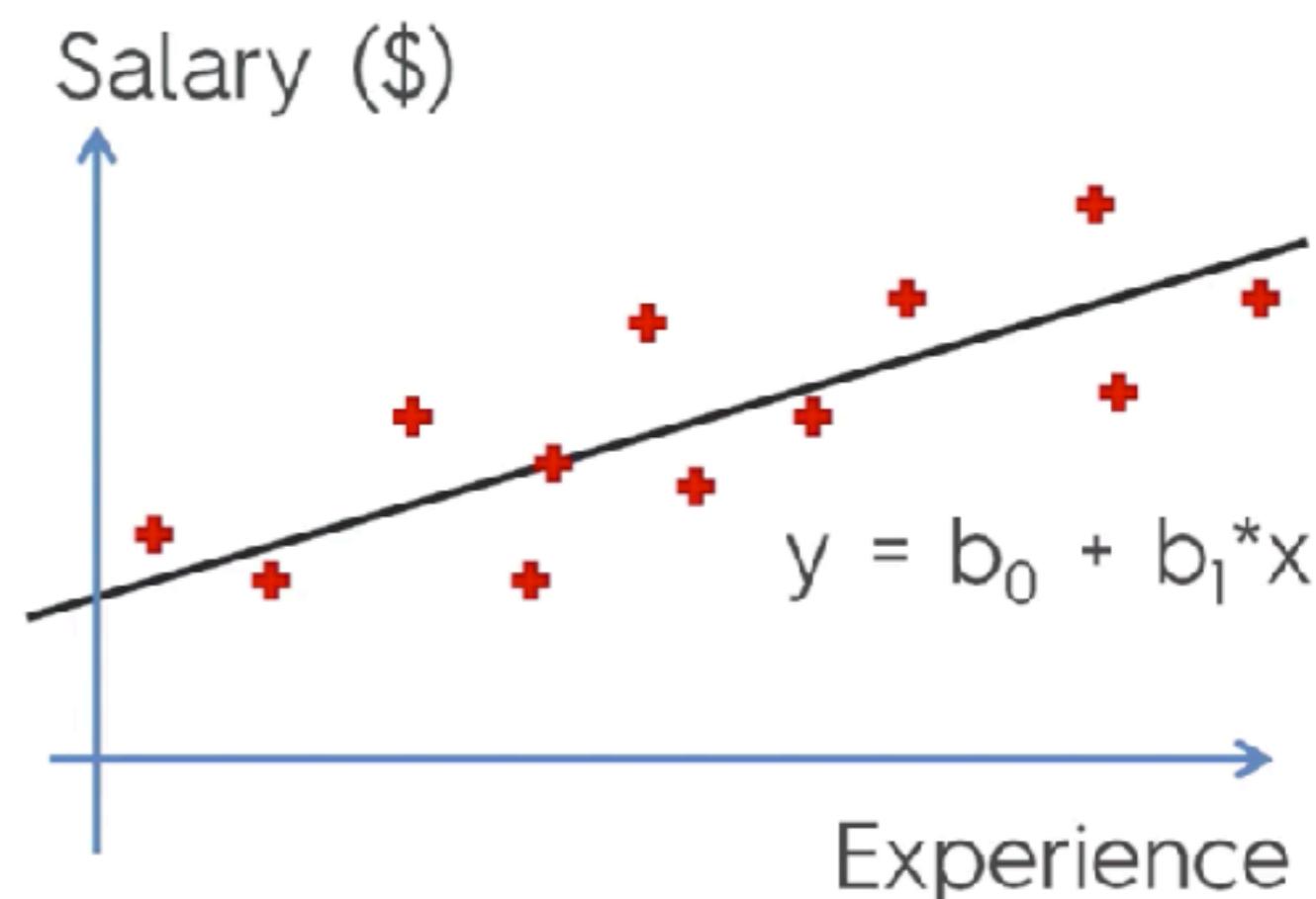
Logistic Regression

We know this:



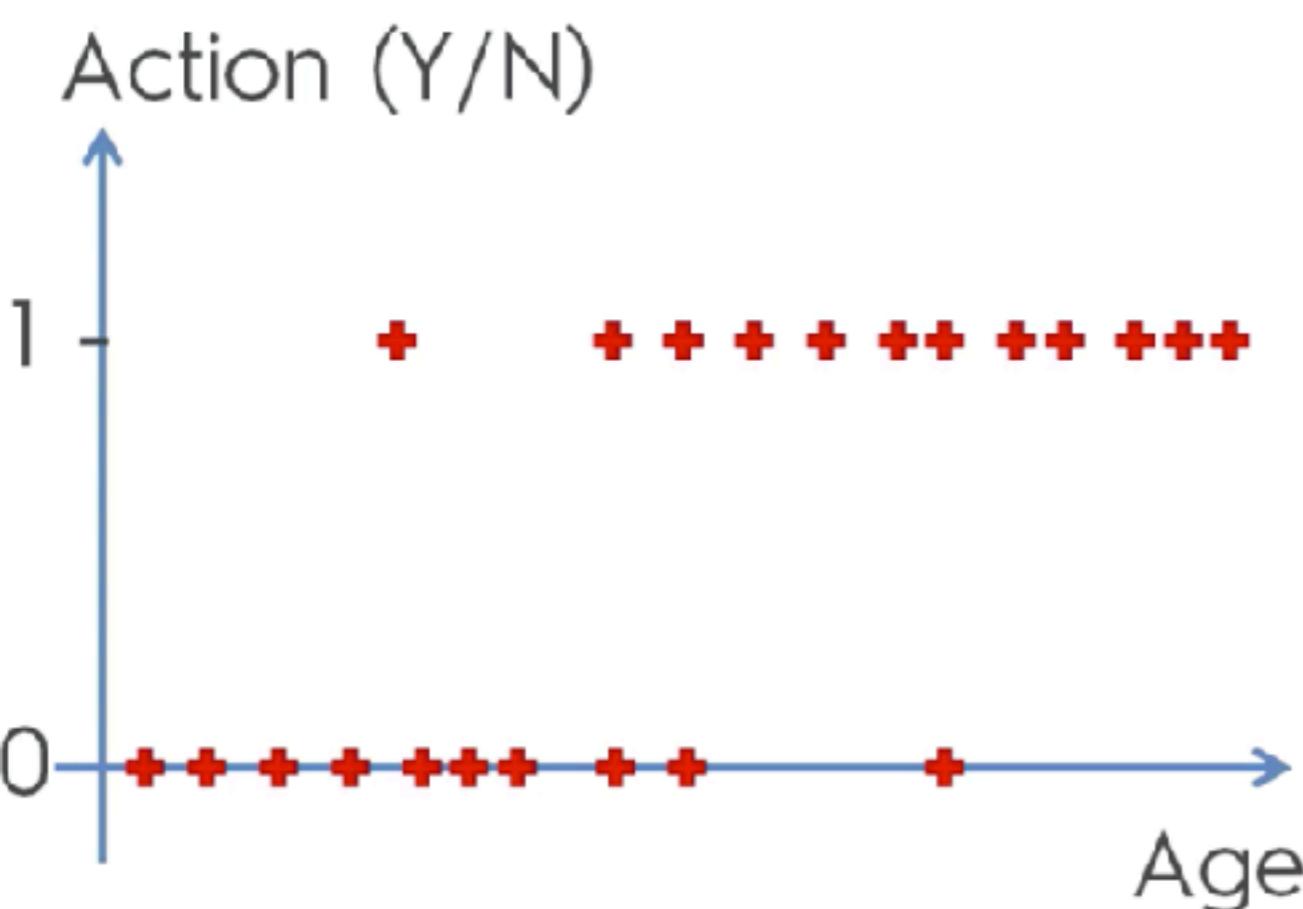
Logistic Regression

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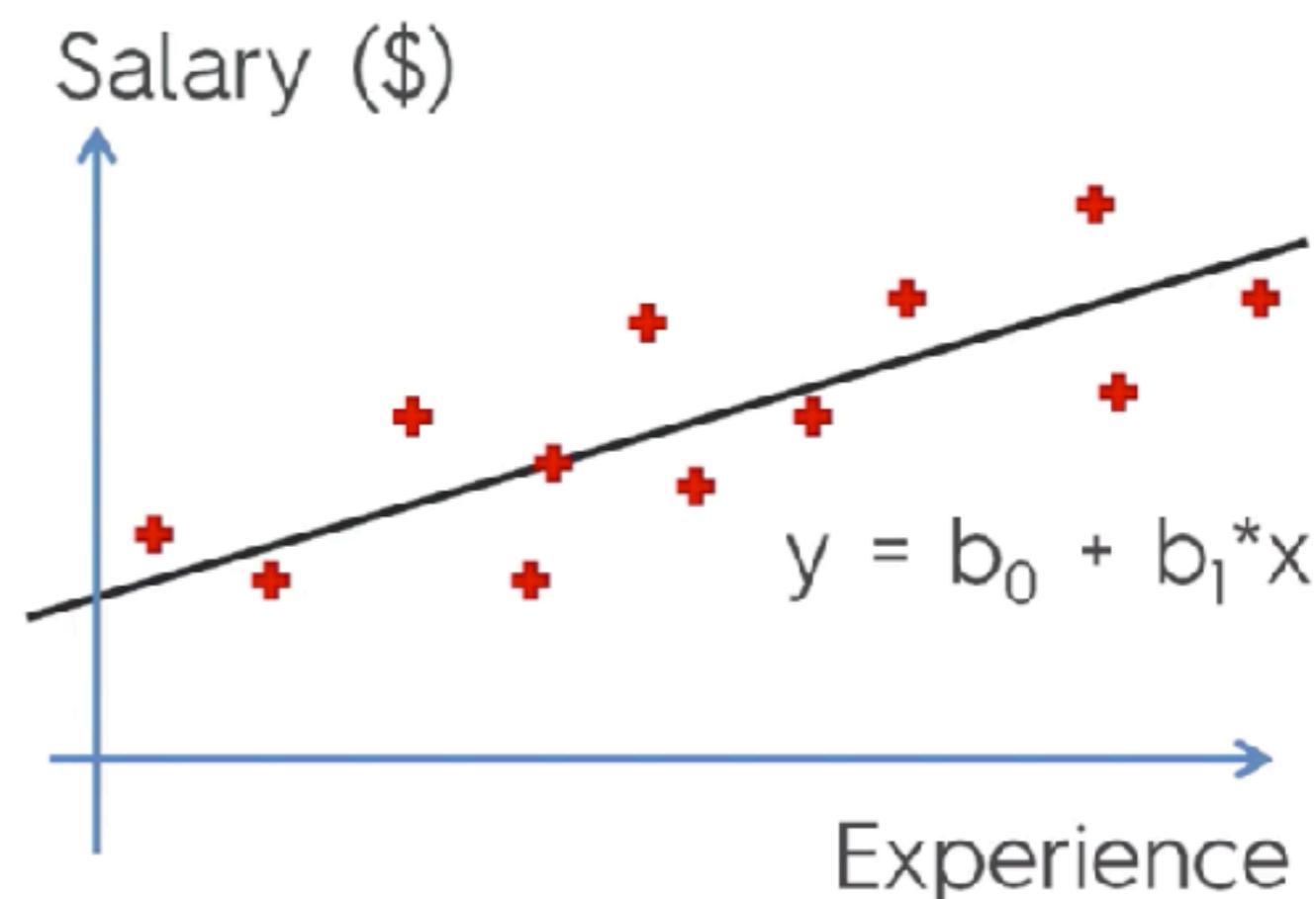


Logistic Regression

This is new:

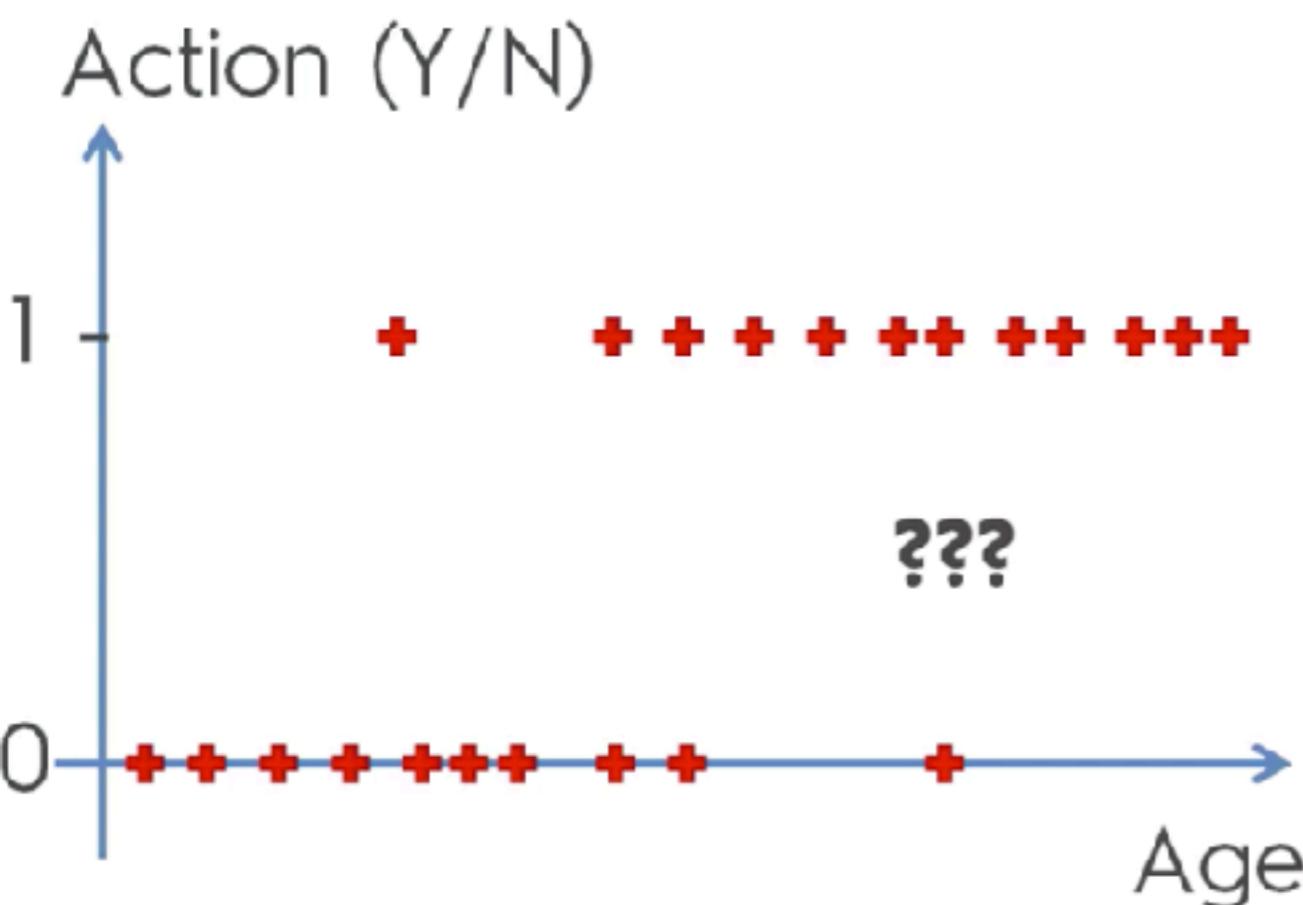


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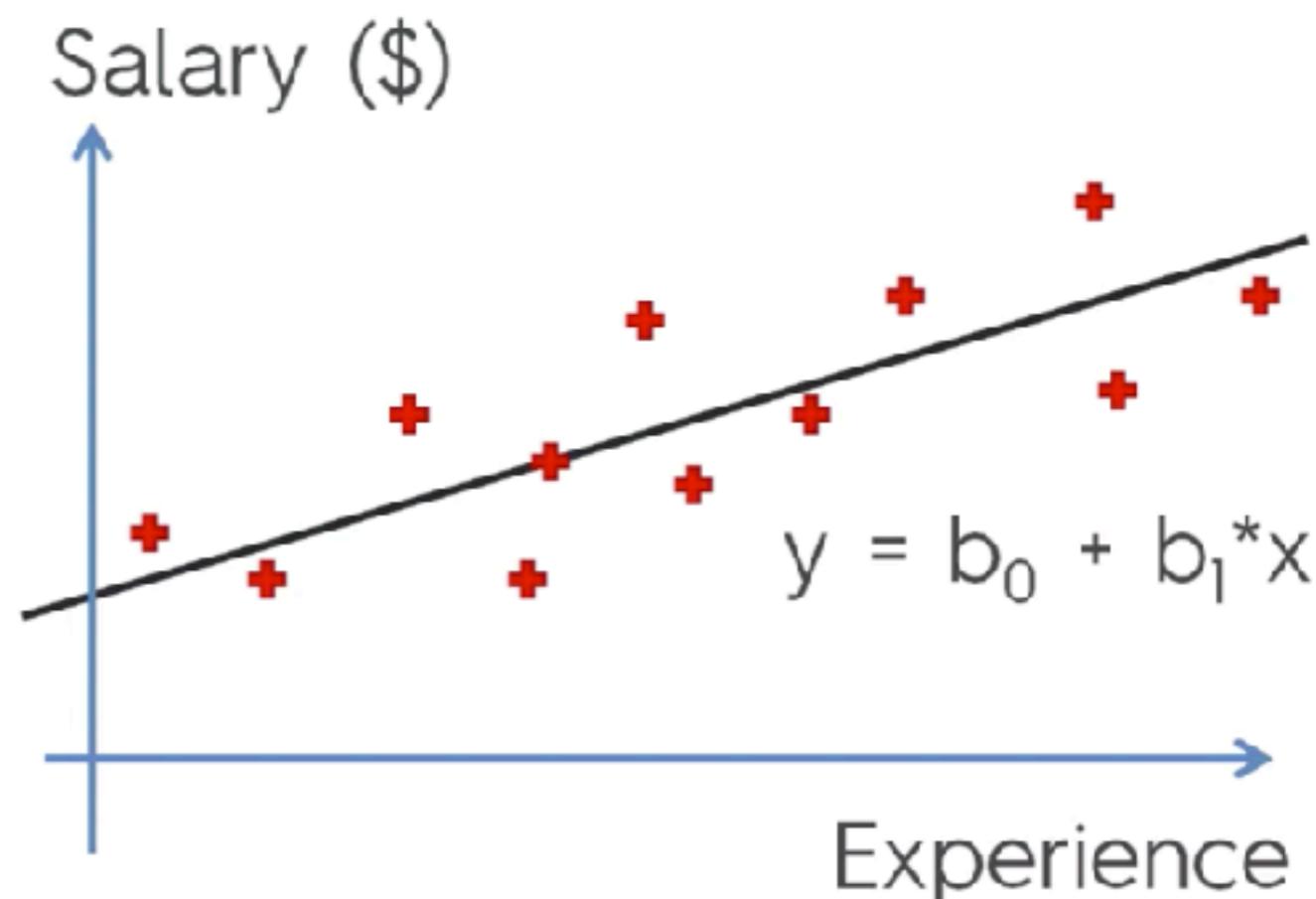


Logistic Regression

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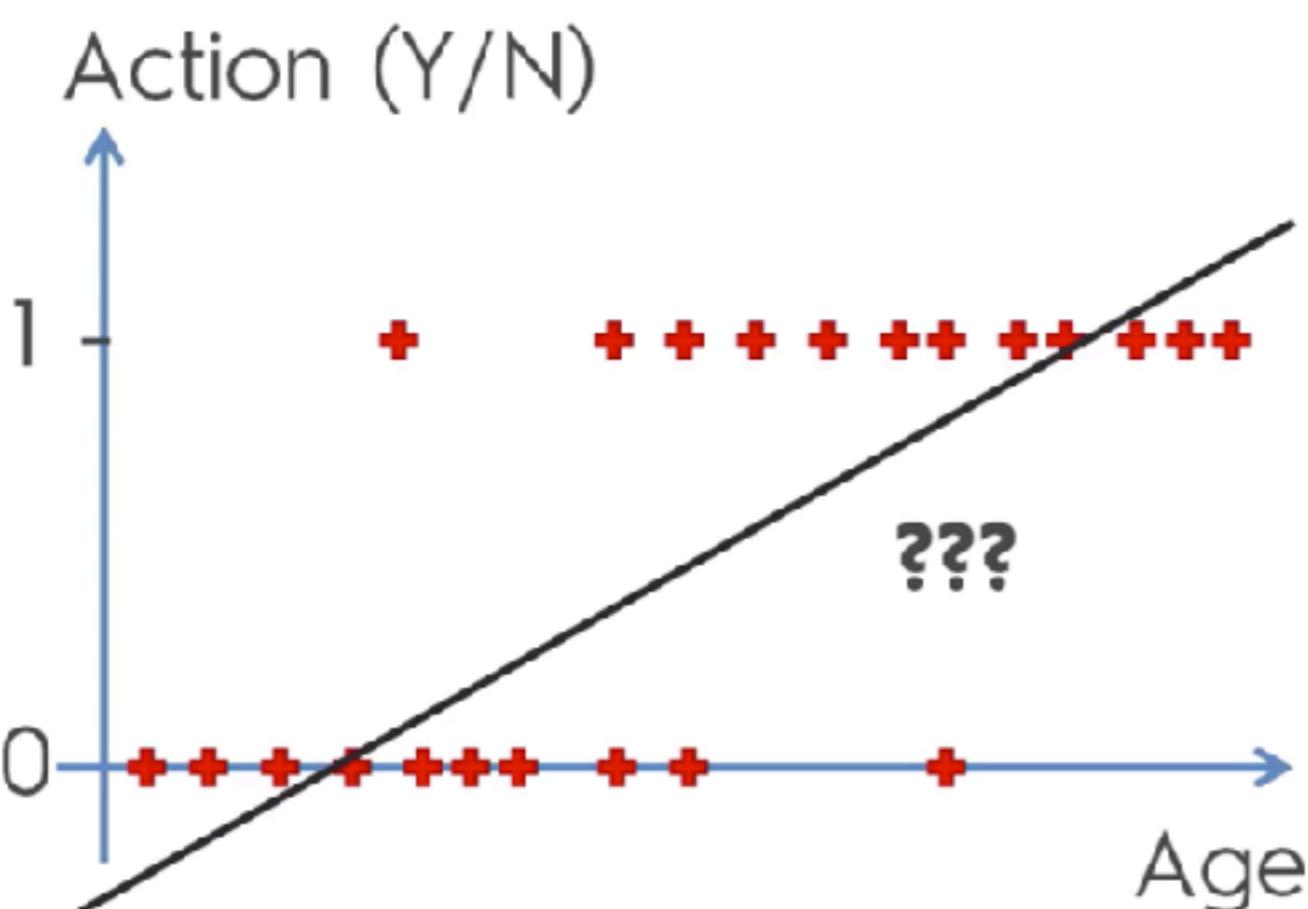


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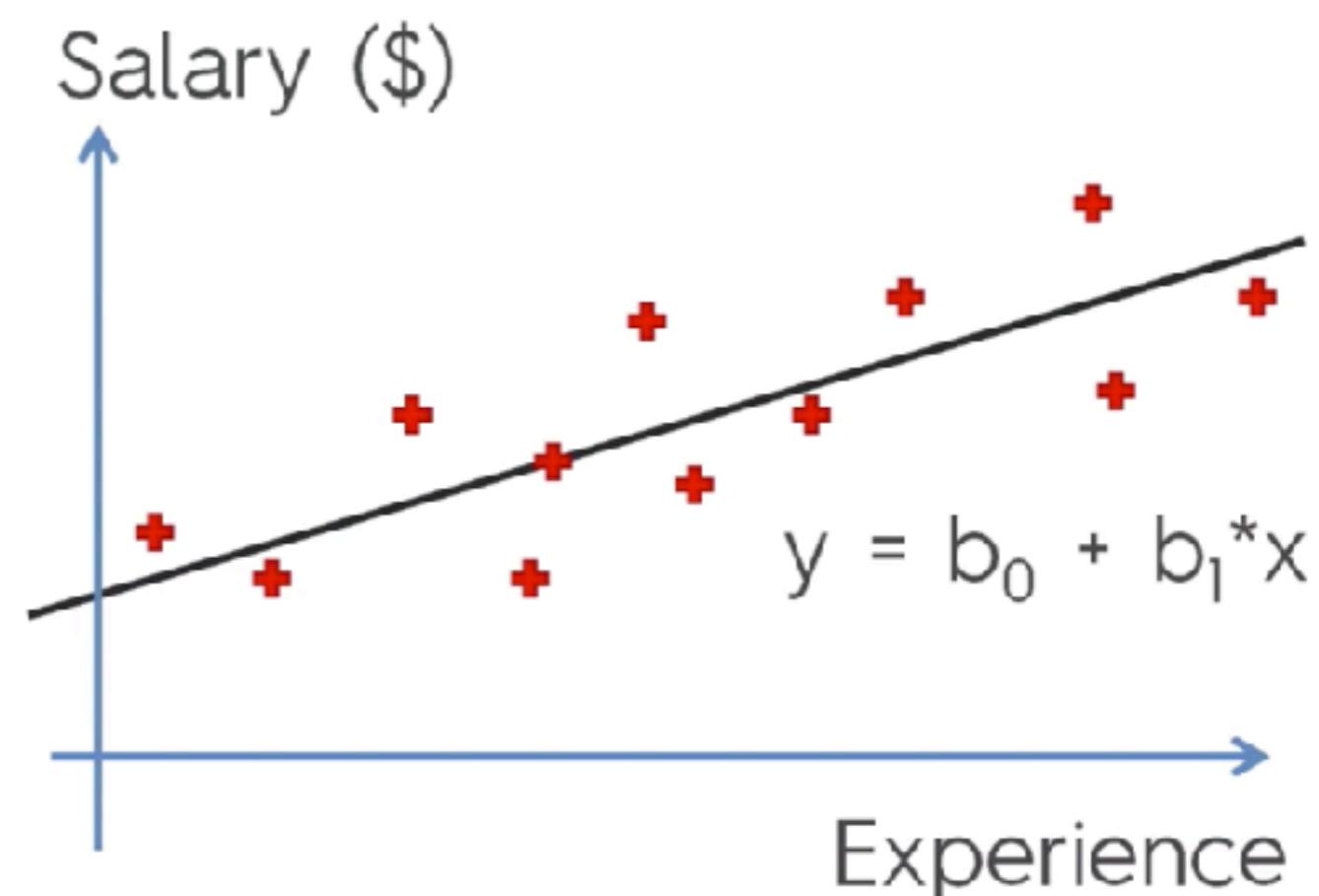


Logistic Regression

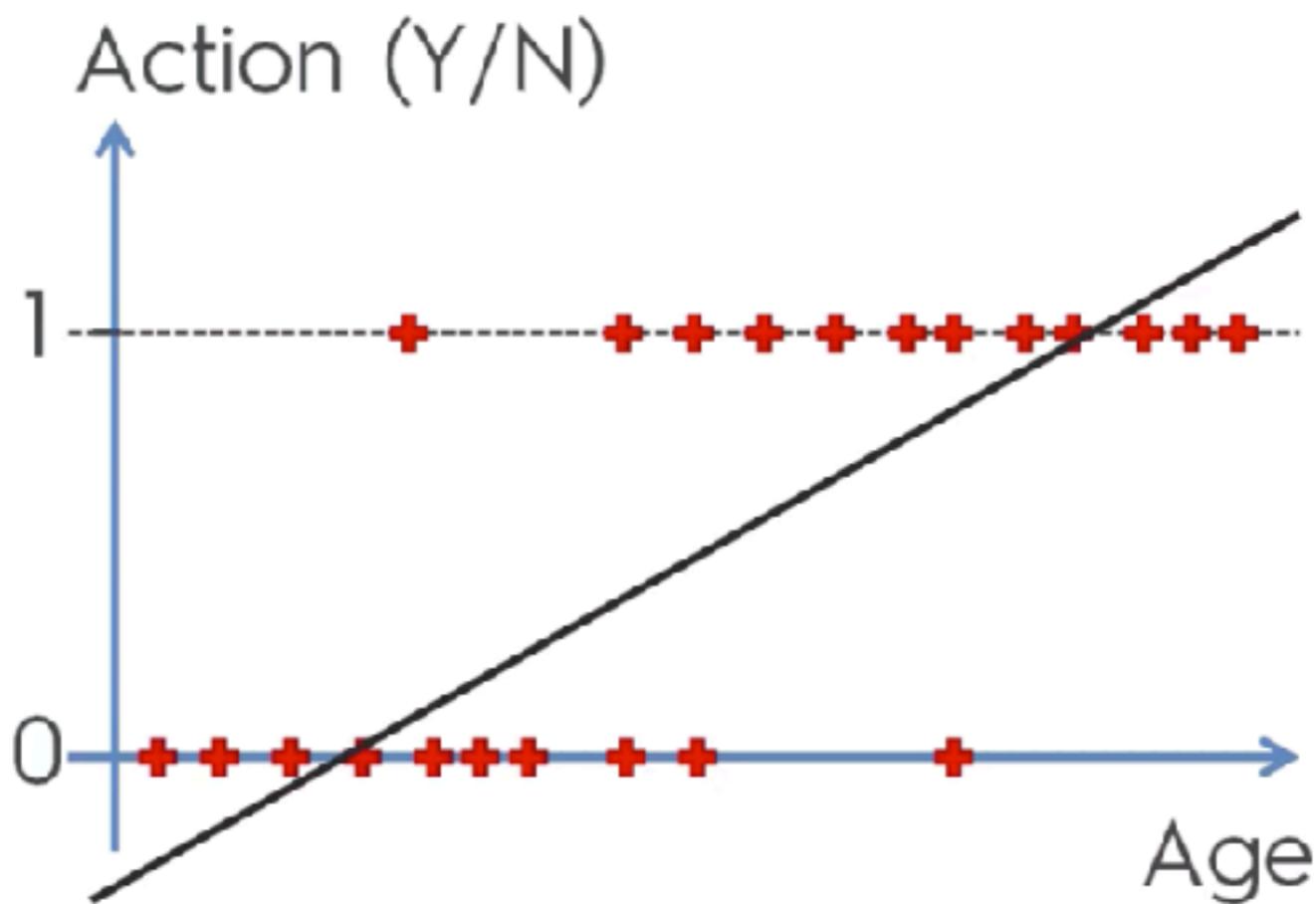
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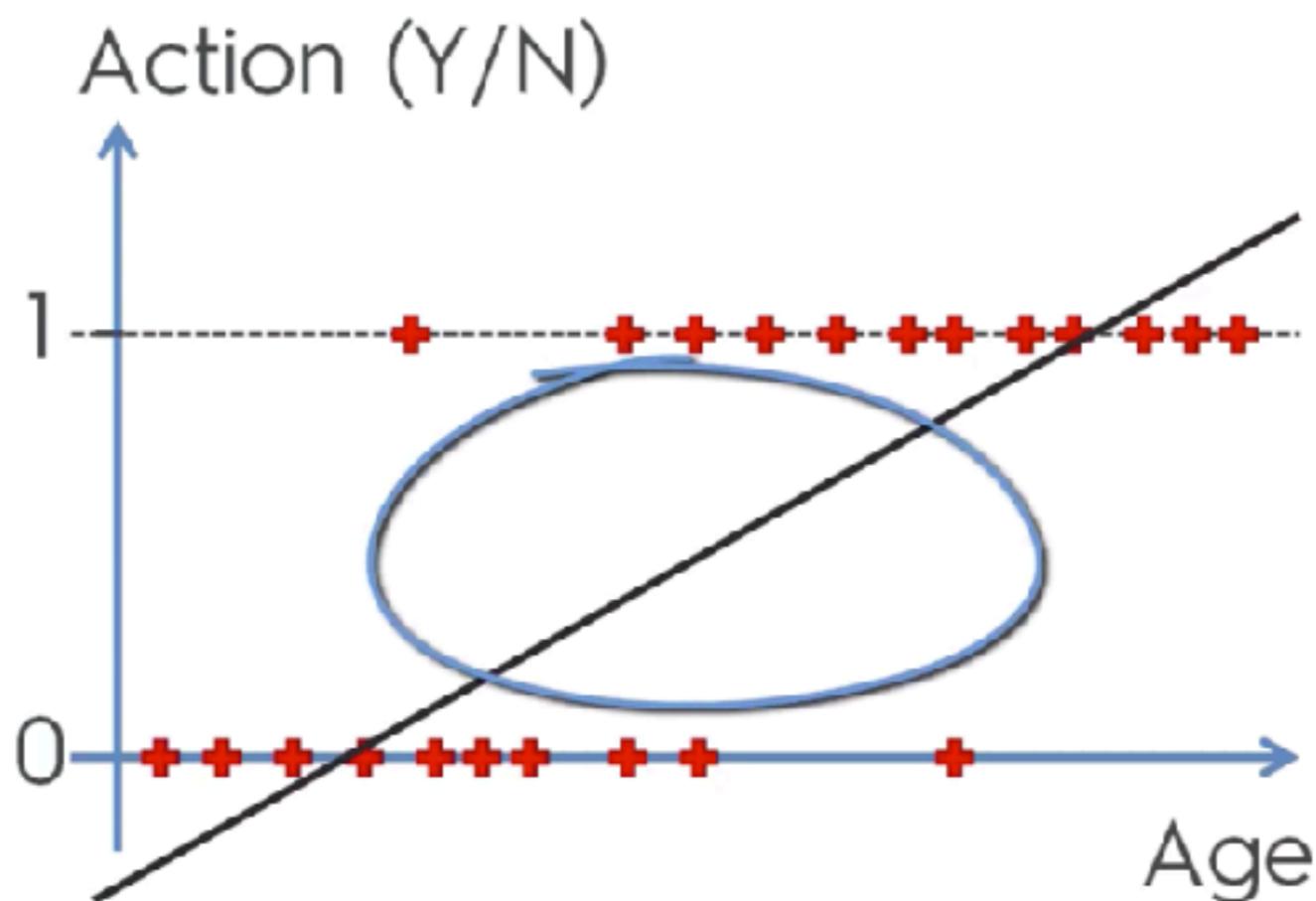
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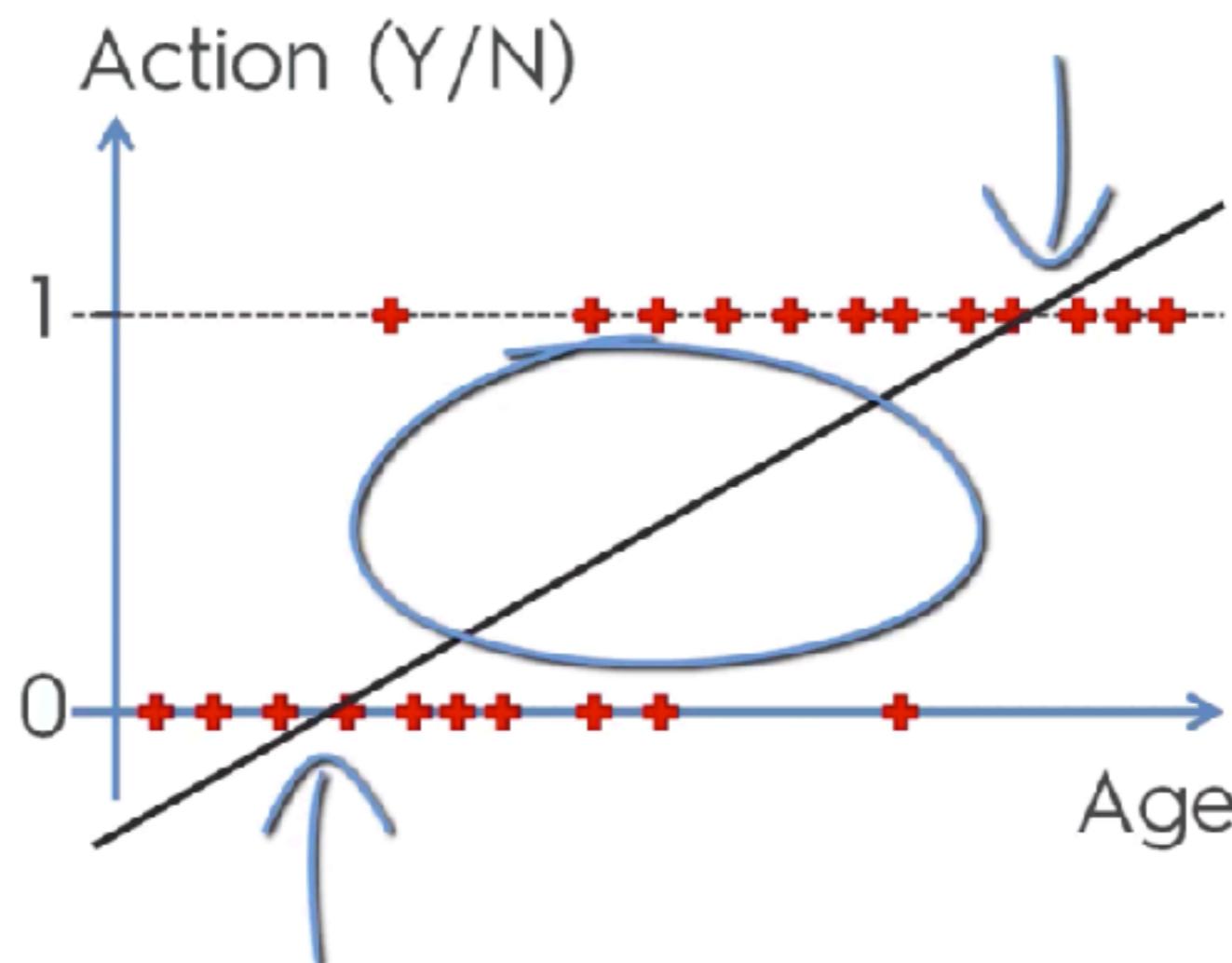
Logistic Regression



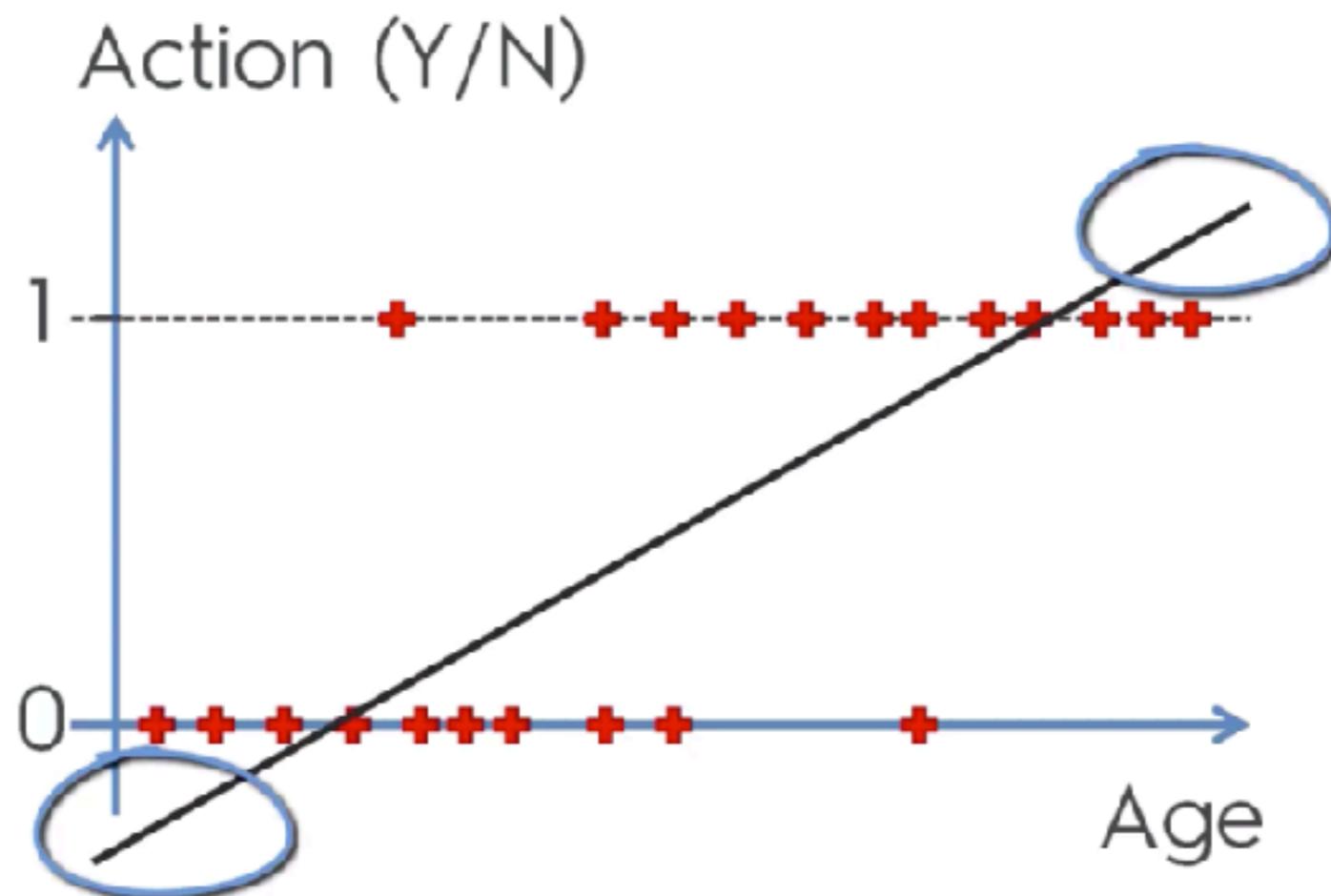
Logistic Regression



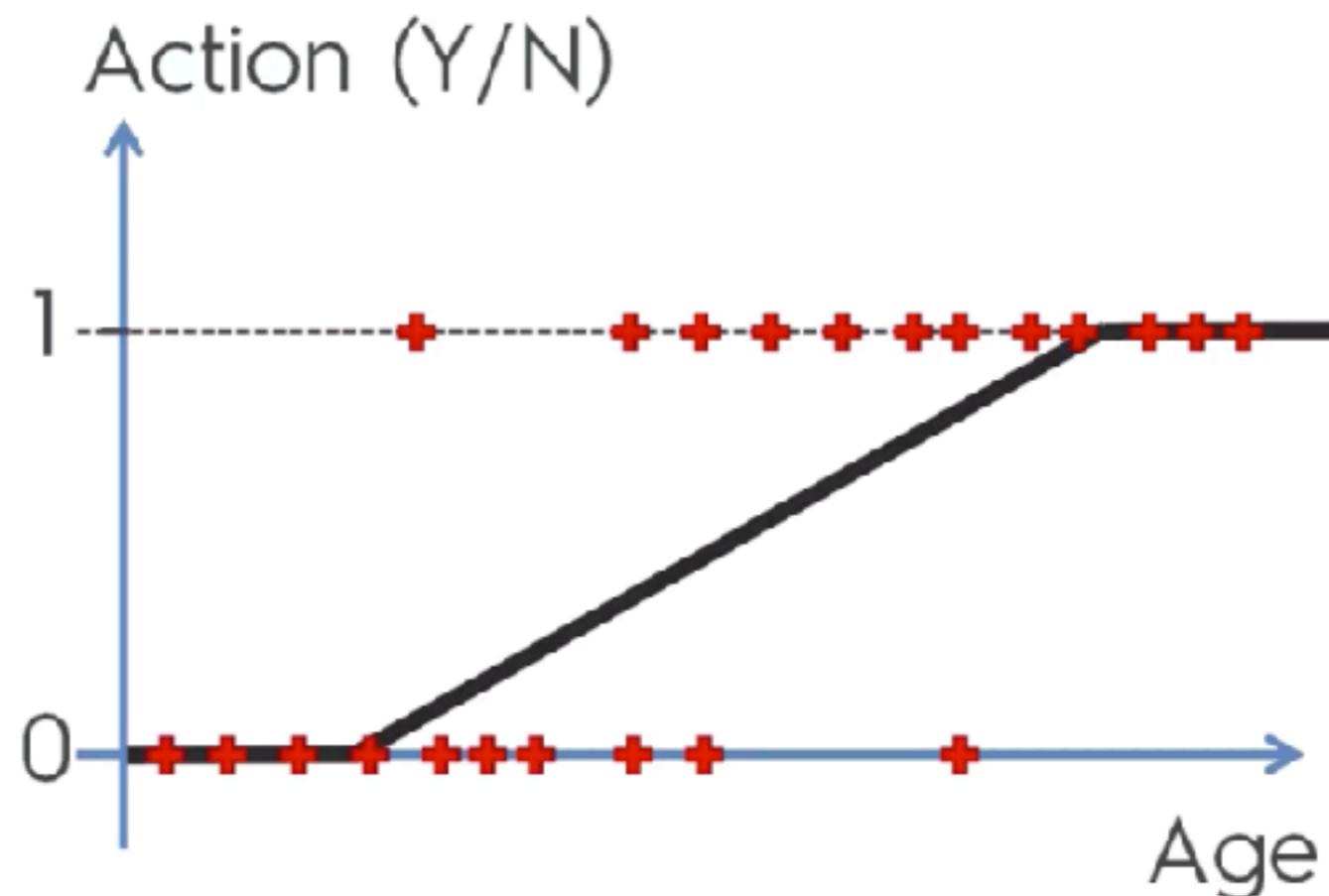
Logistic Regression



Logistic Regression

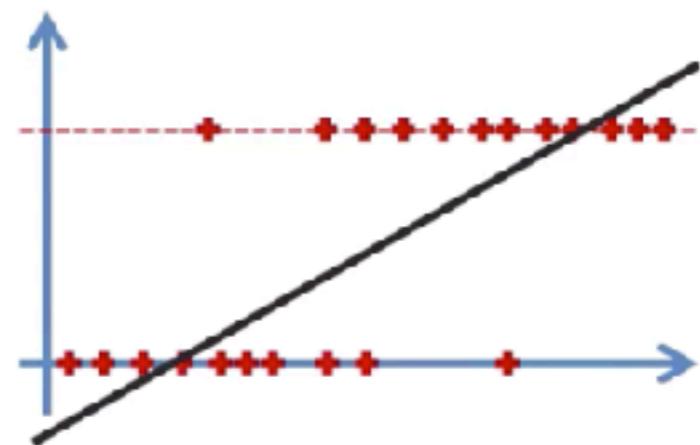


Logistic Regression



Logistic Regression

$$y = b_0 + b_1 * x$$

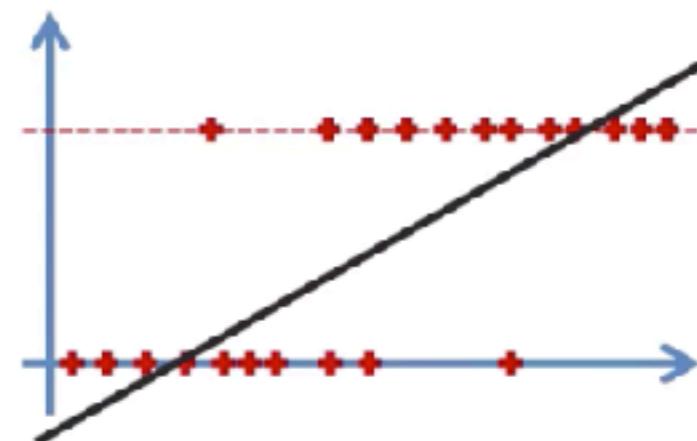


Logistic Regression

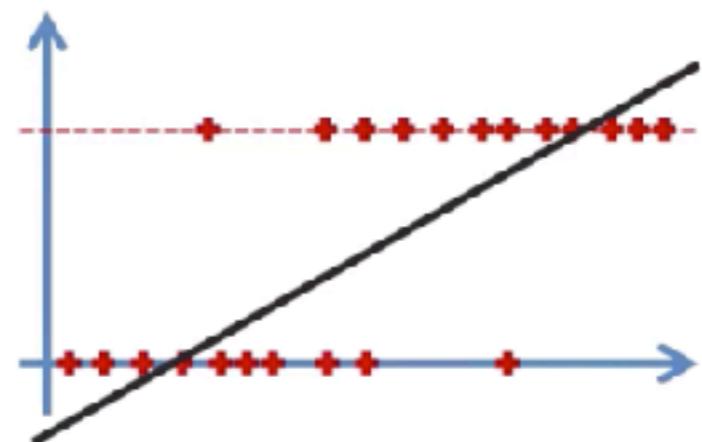
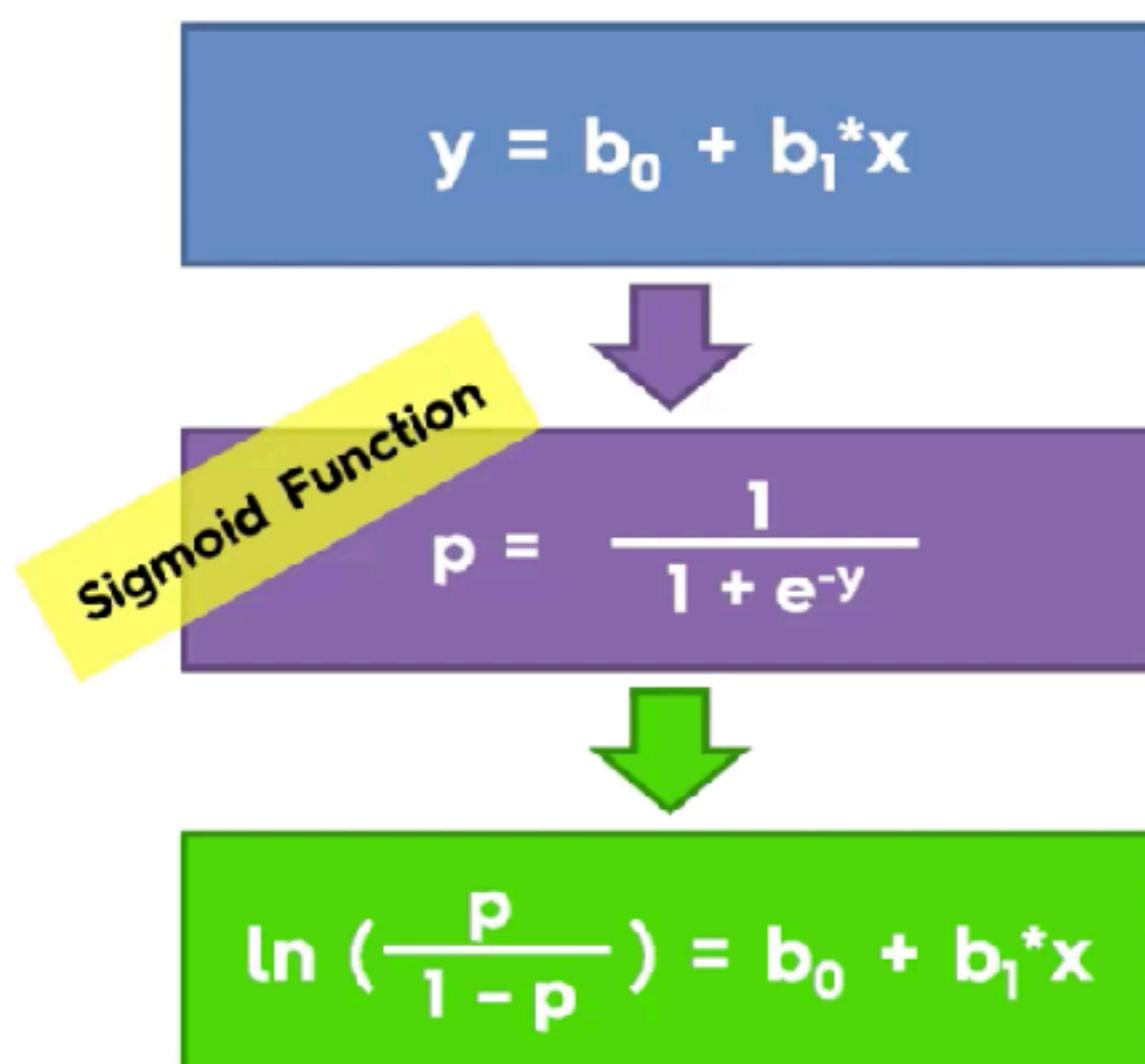
$$y = b_0 + b_1 * x$$

Sigmoid Function

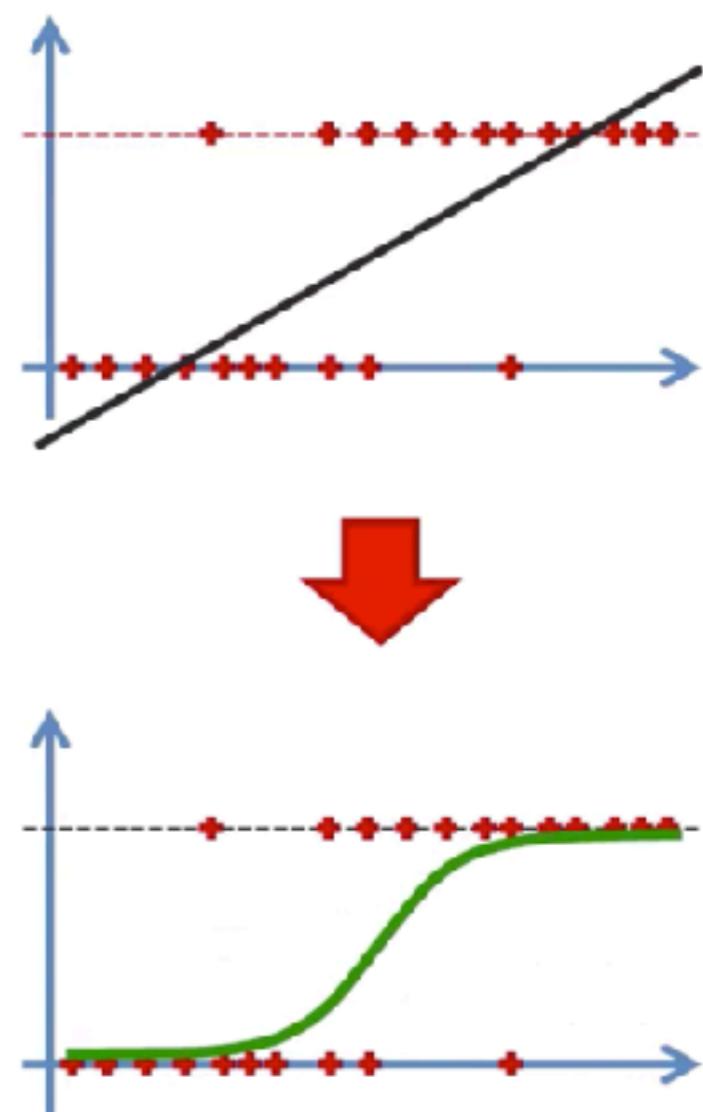
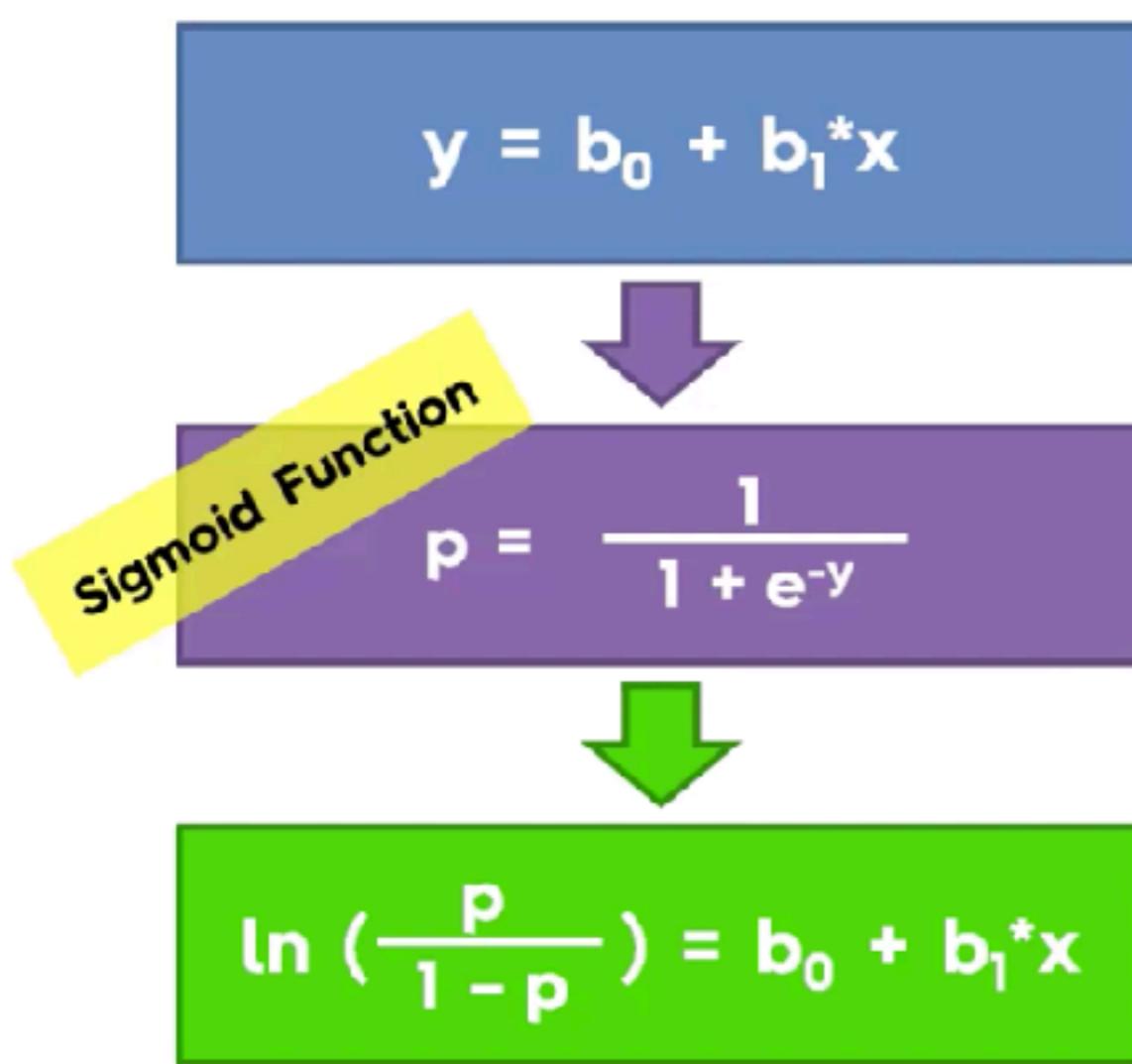
$$p = \frac{1}{1 + e^{-y}}$$



Logistic Regression



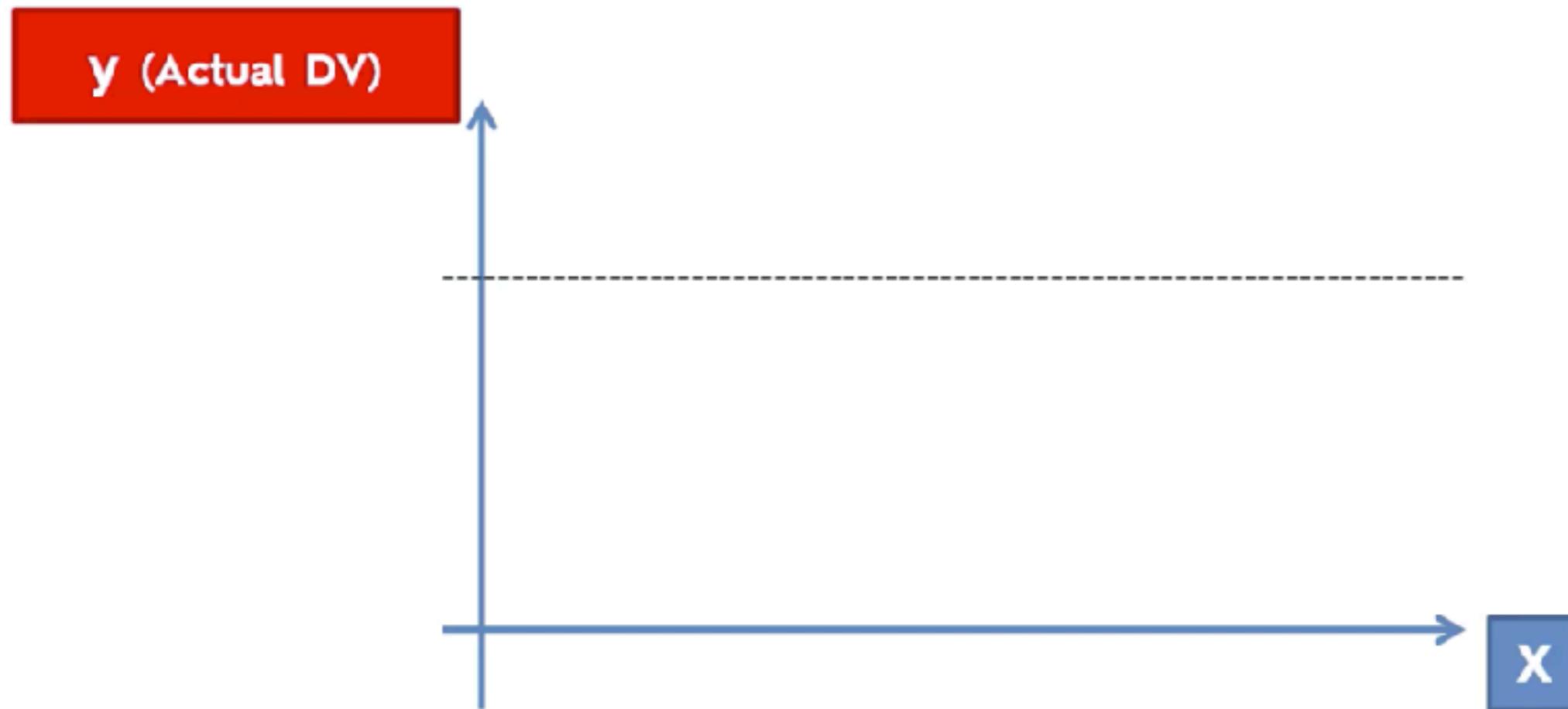
Logistic Regression



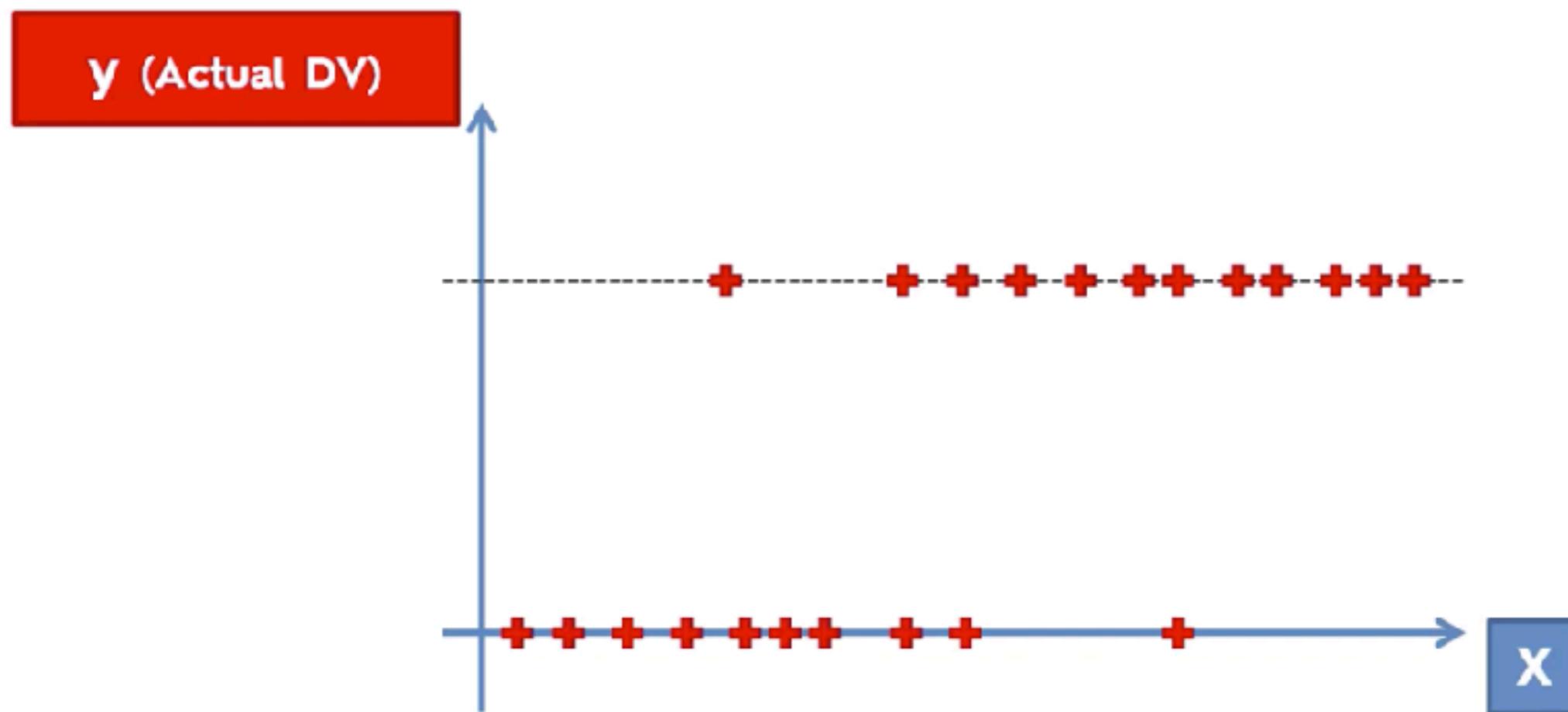
Logistic Regression

**WHAT JUST
HAPPENED
???**

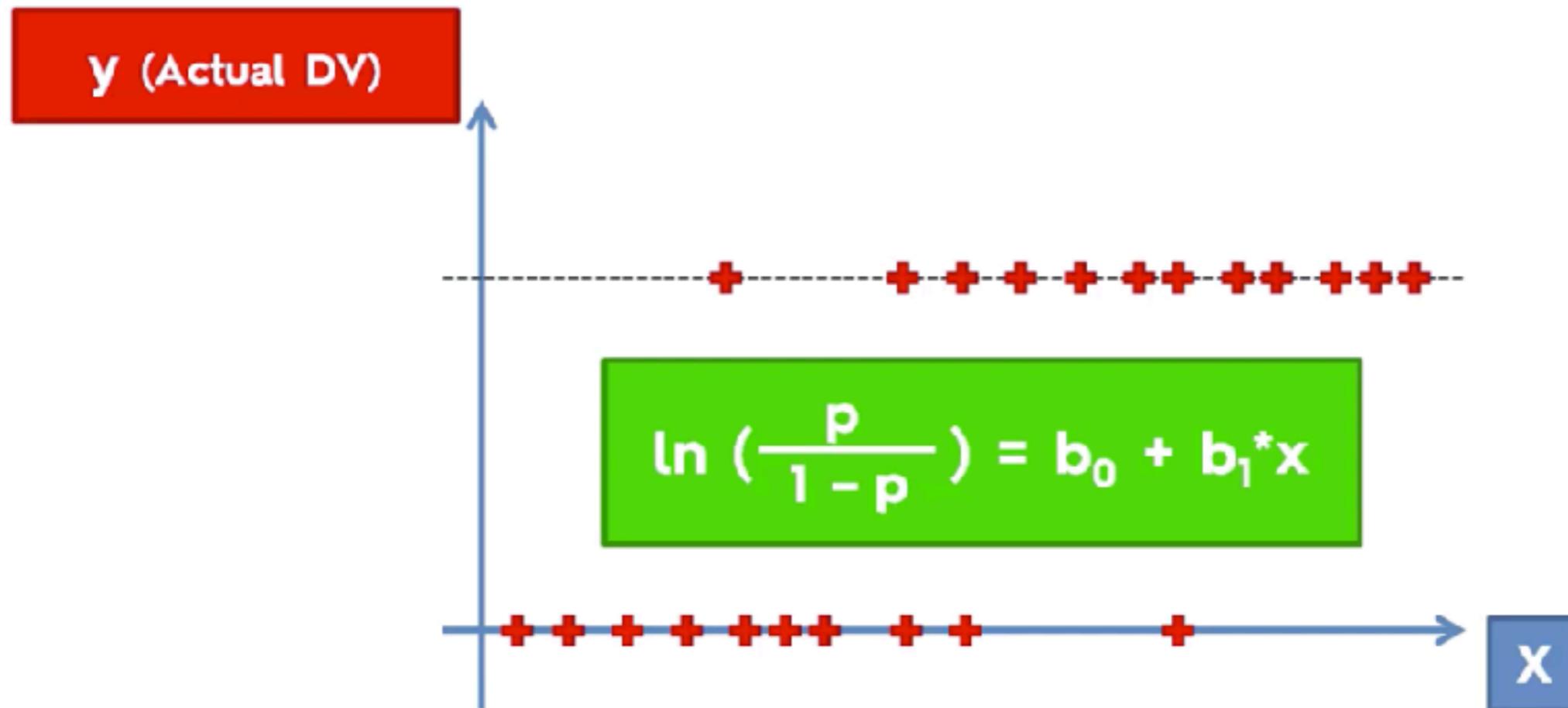
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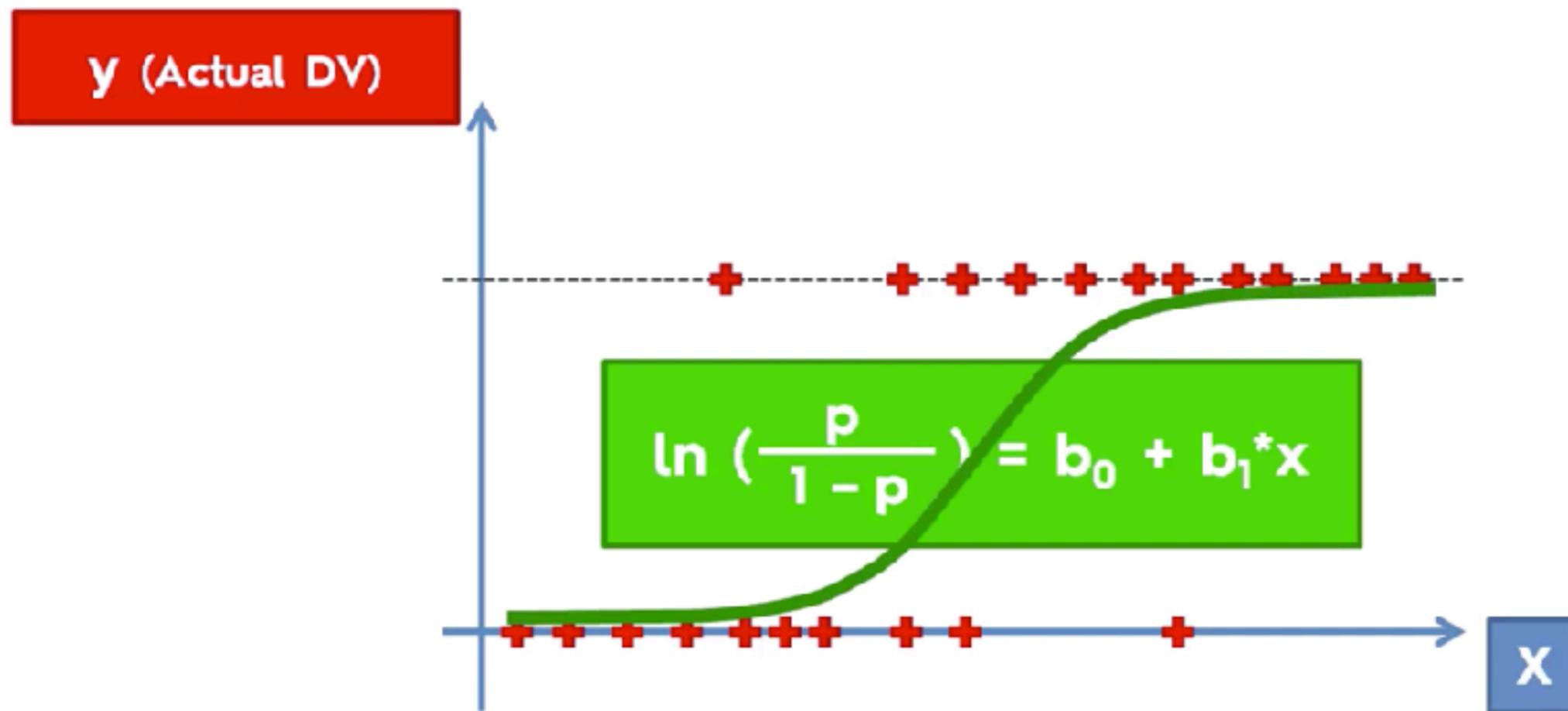
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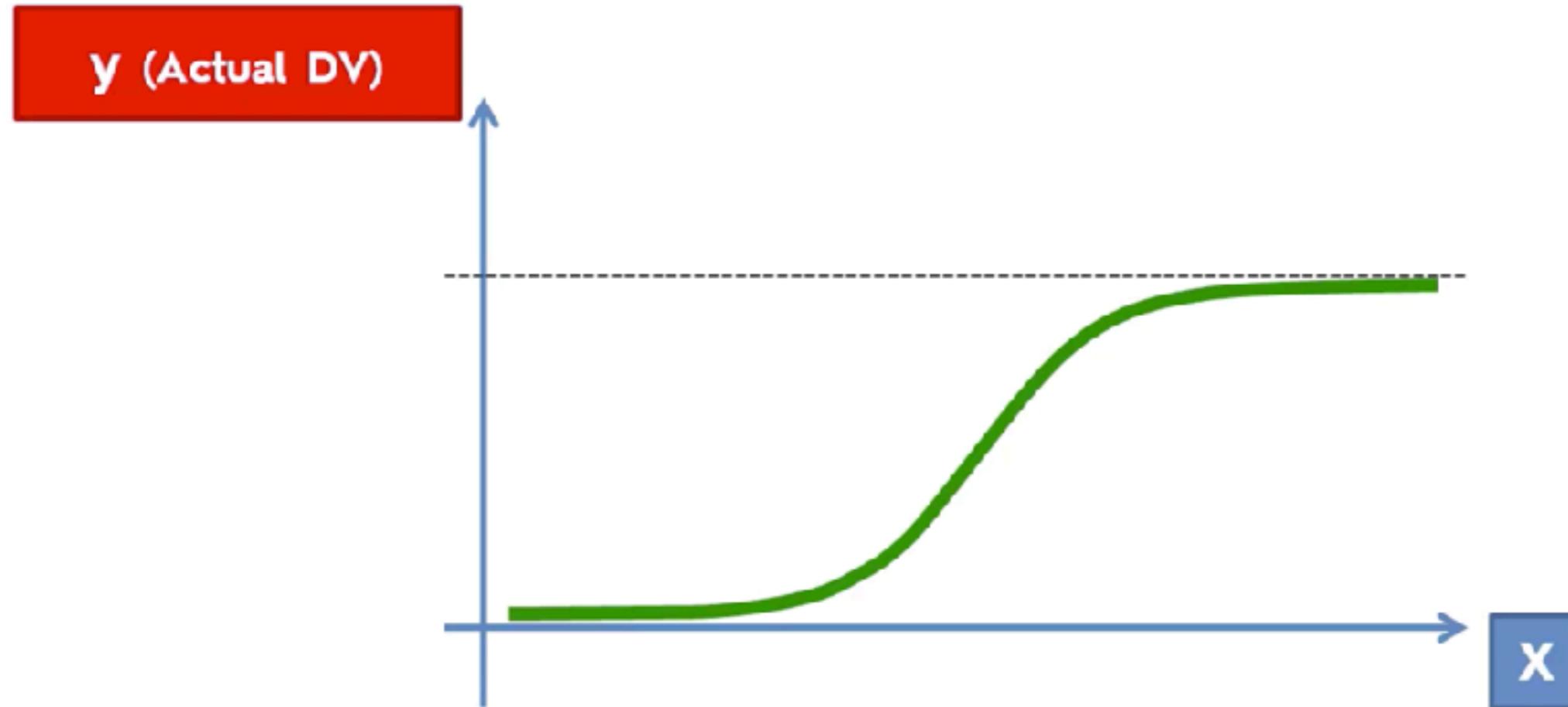
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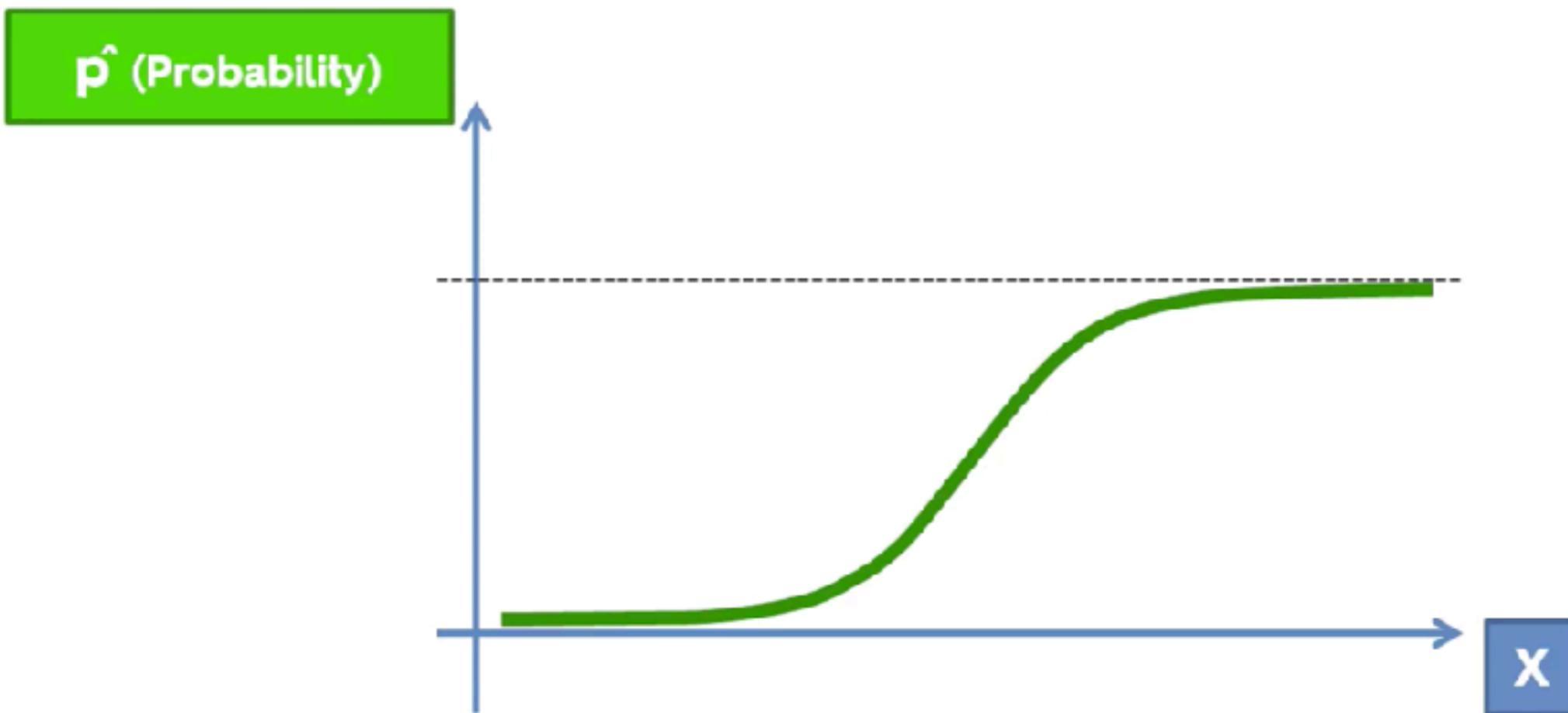
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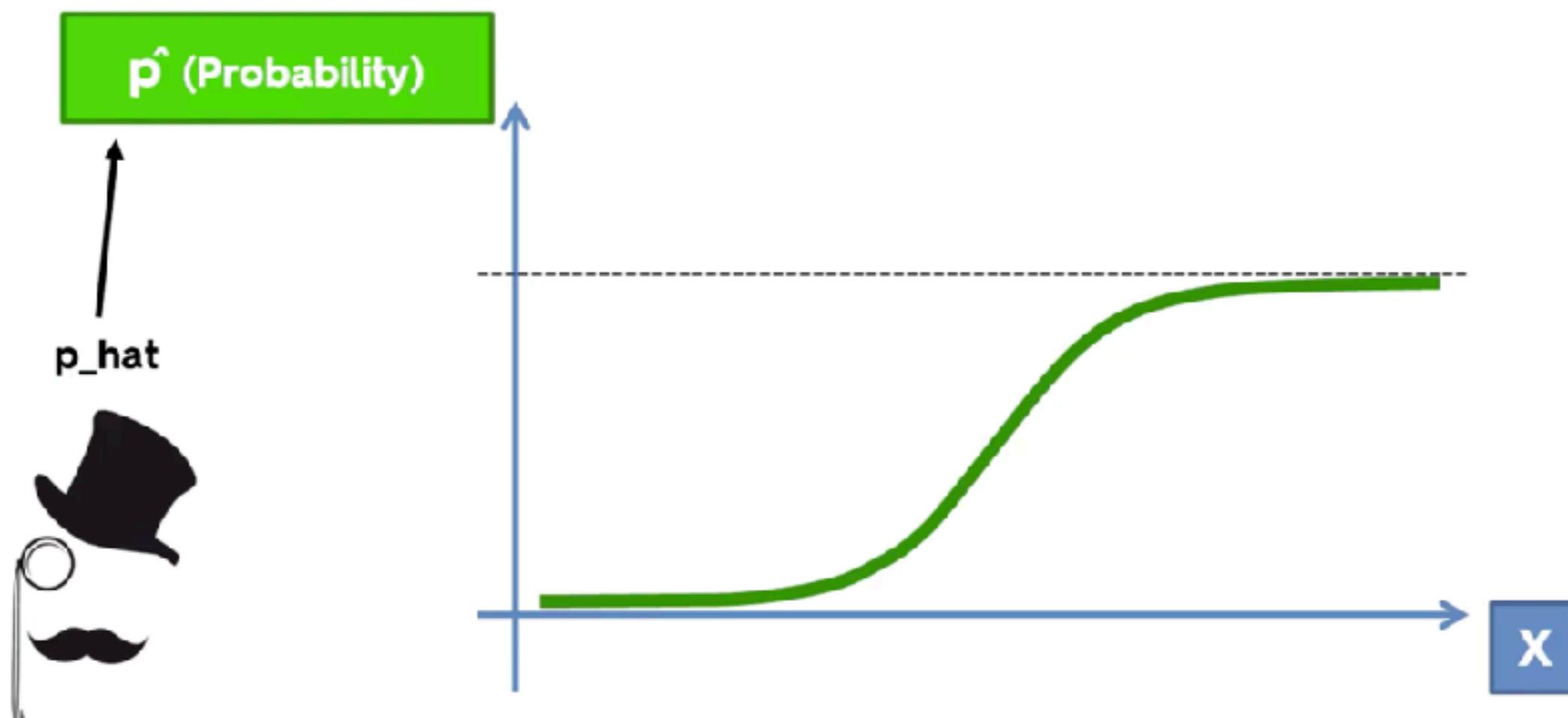
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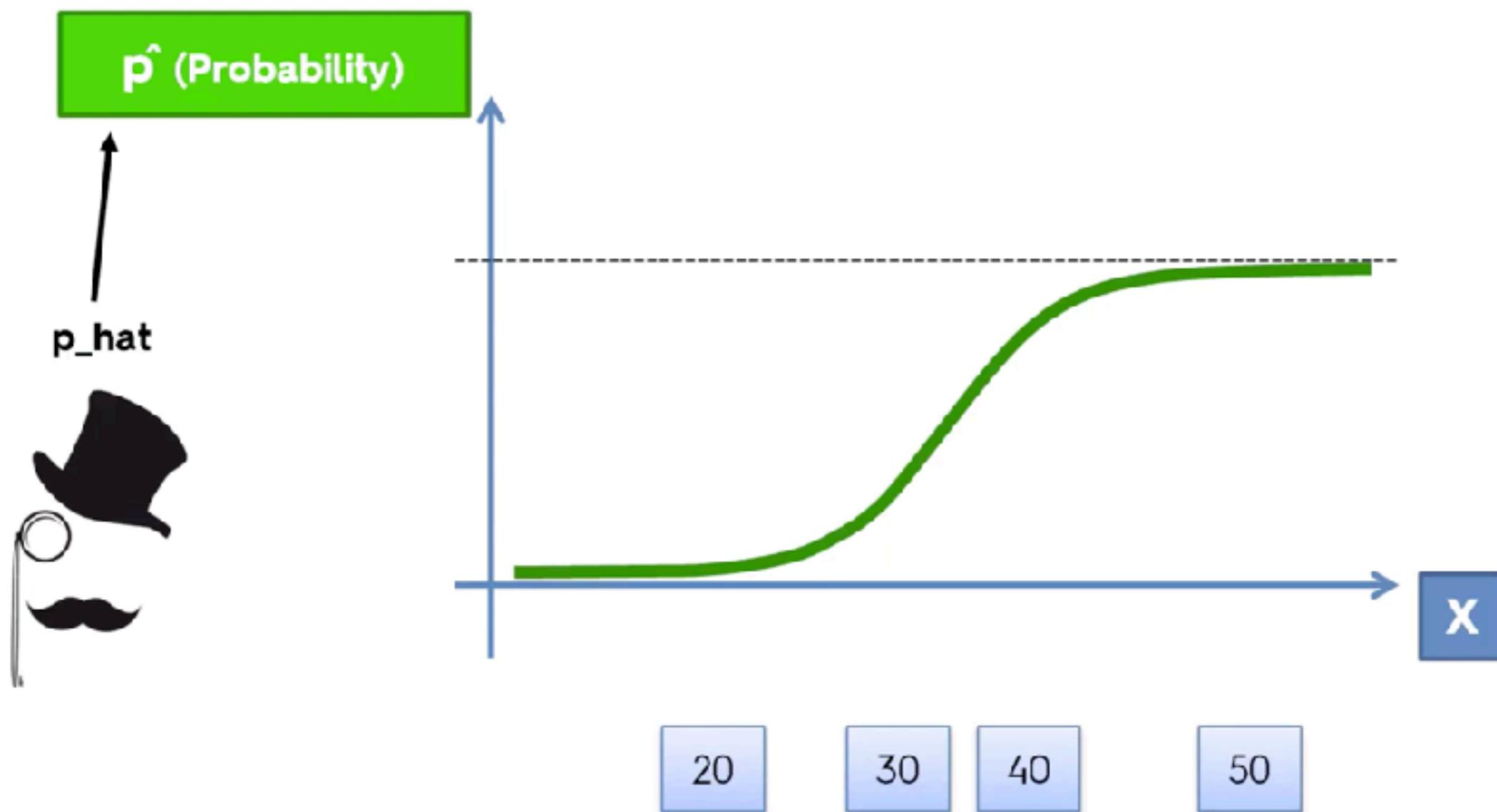
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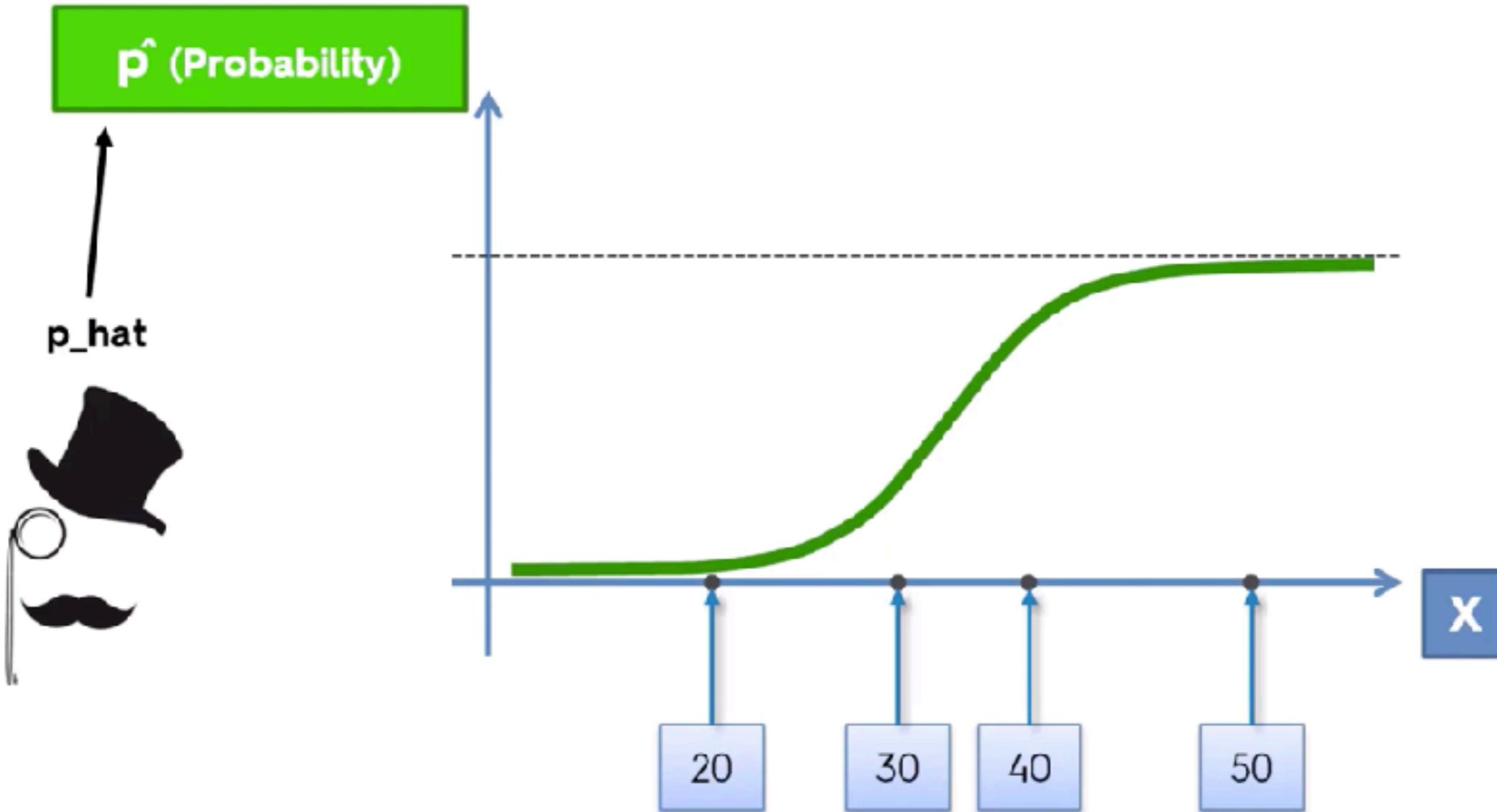
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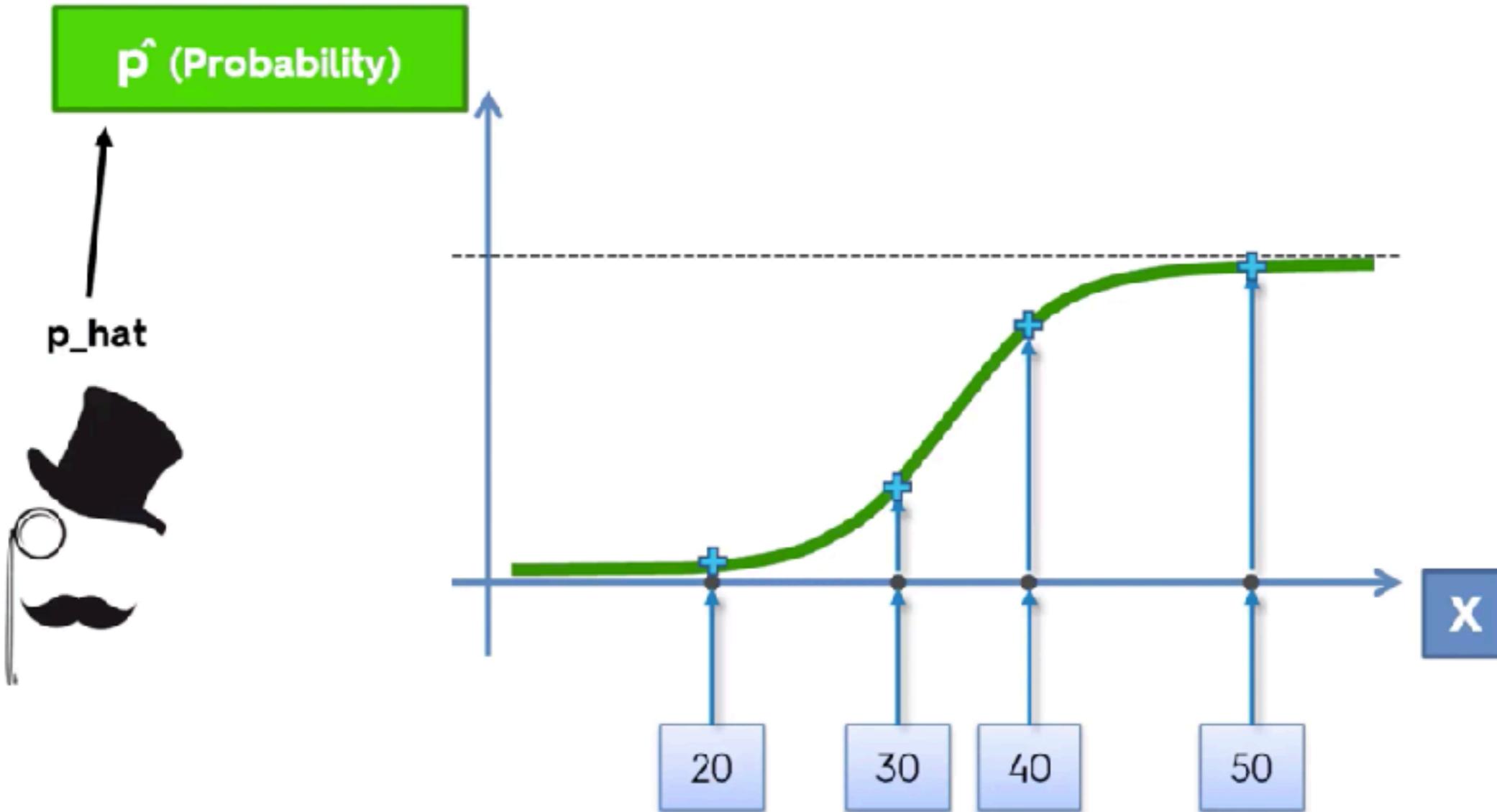
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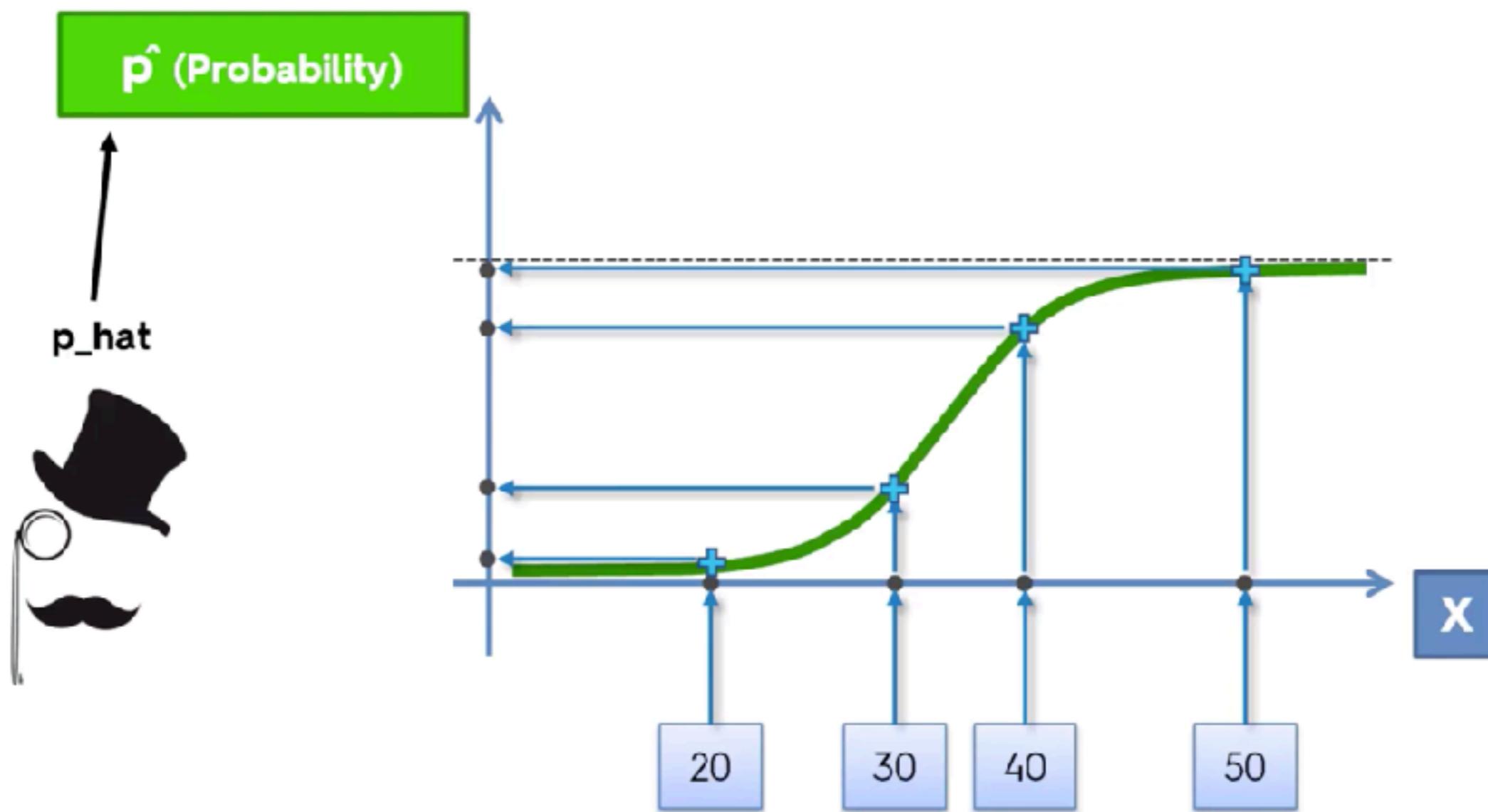
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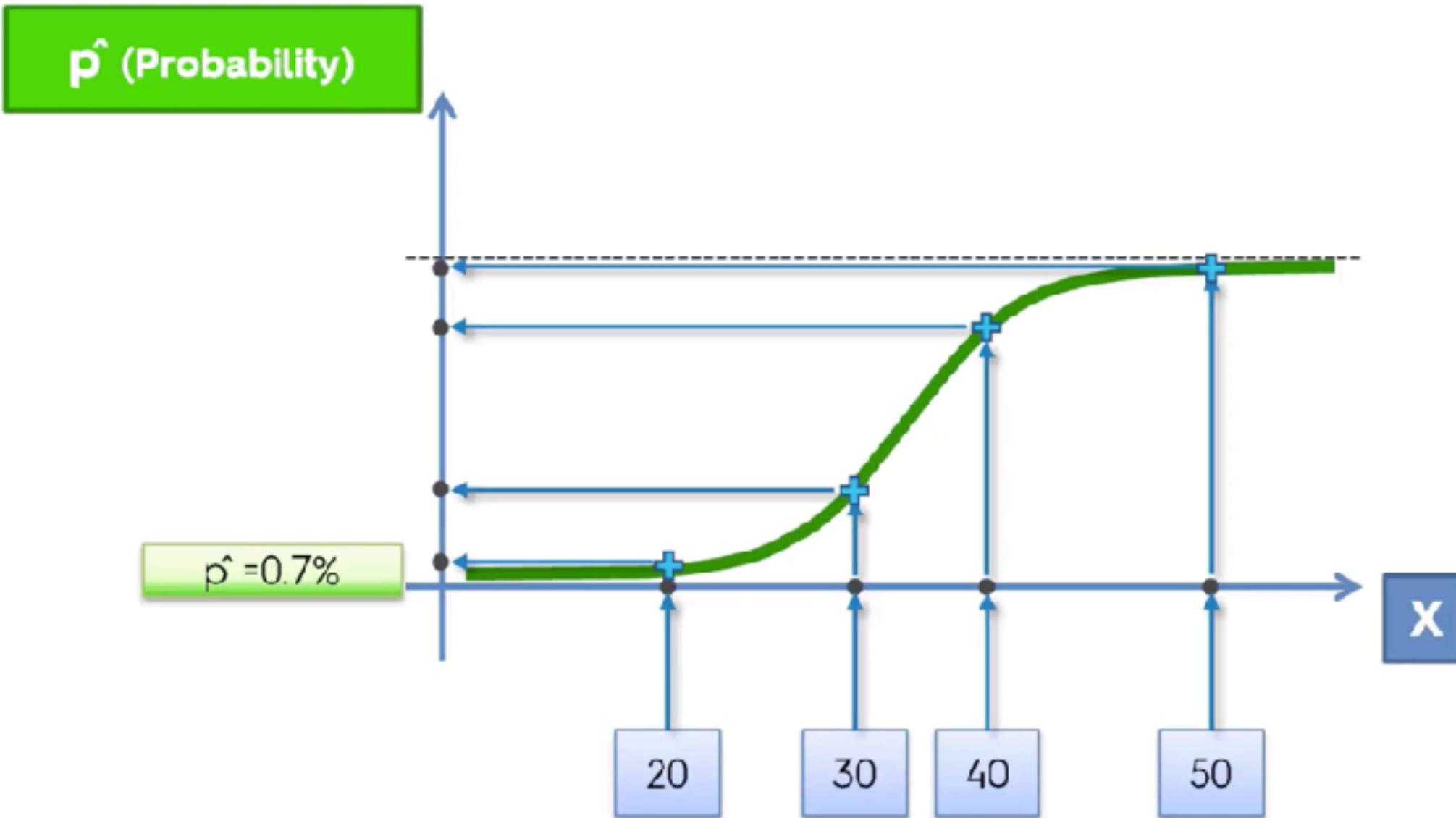
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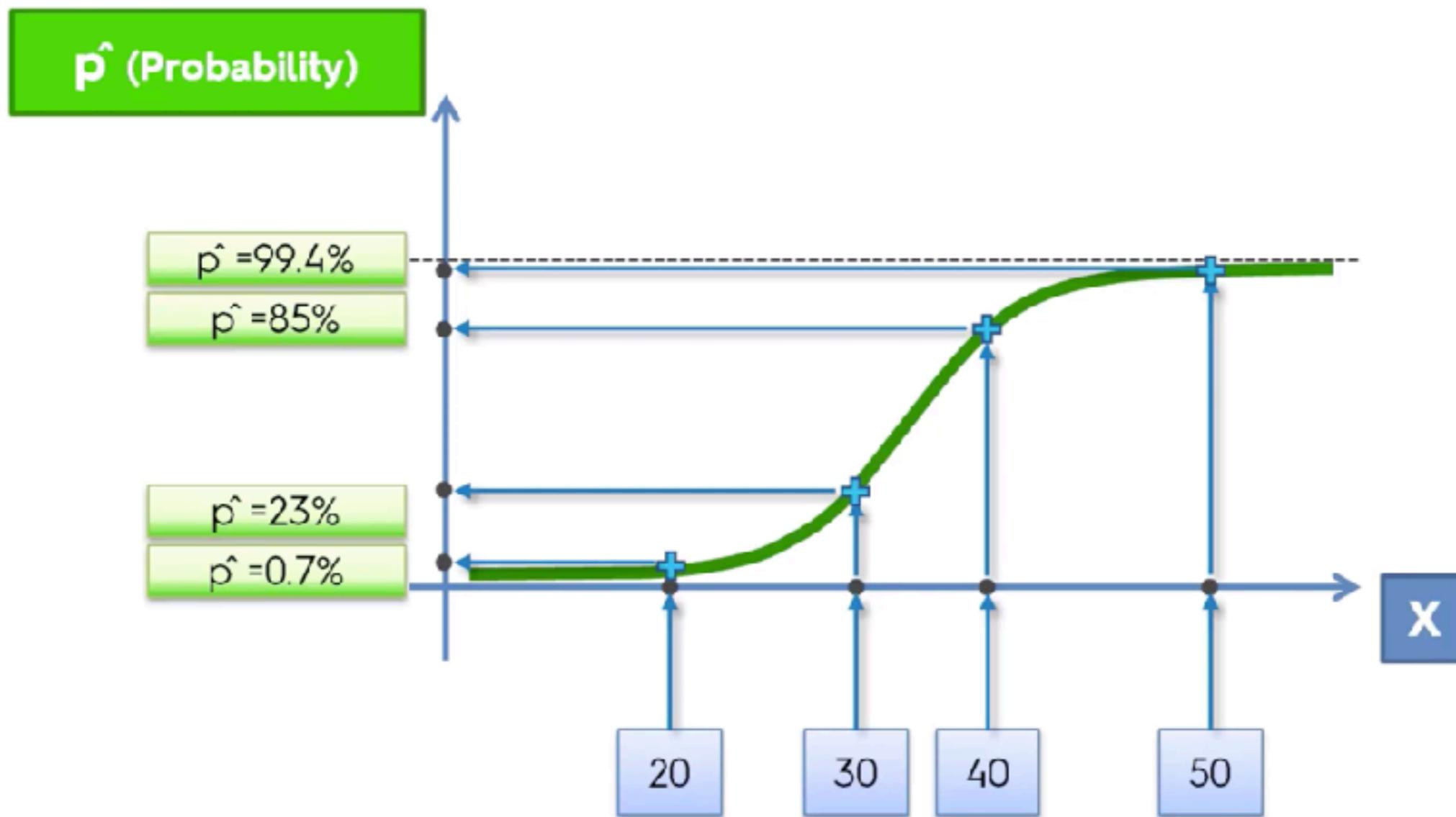
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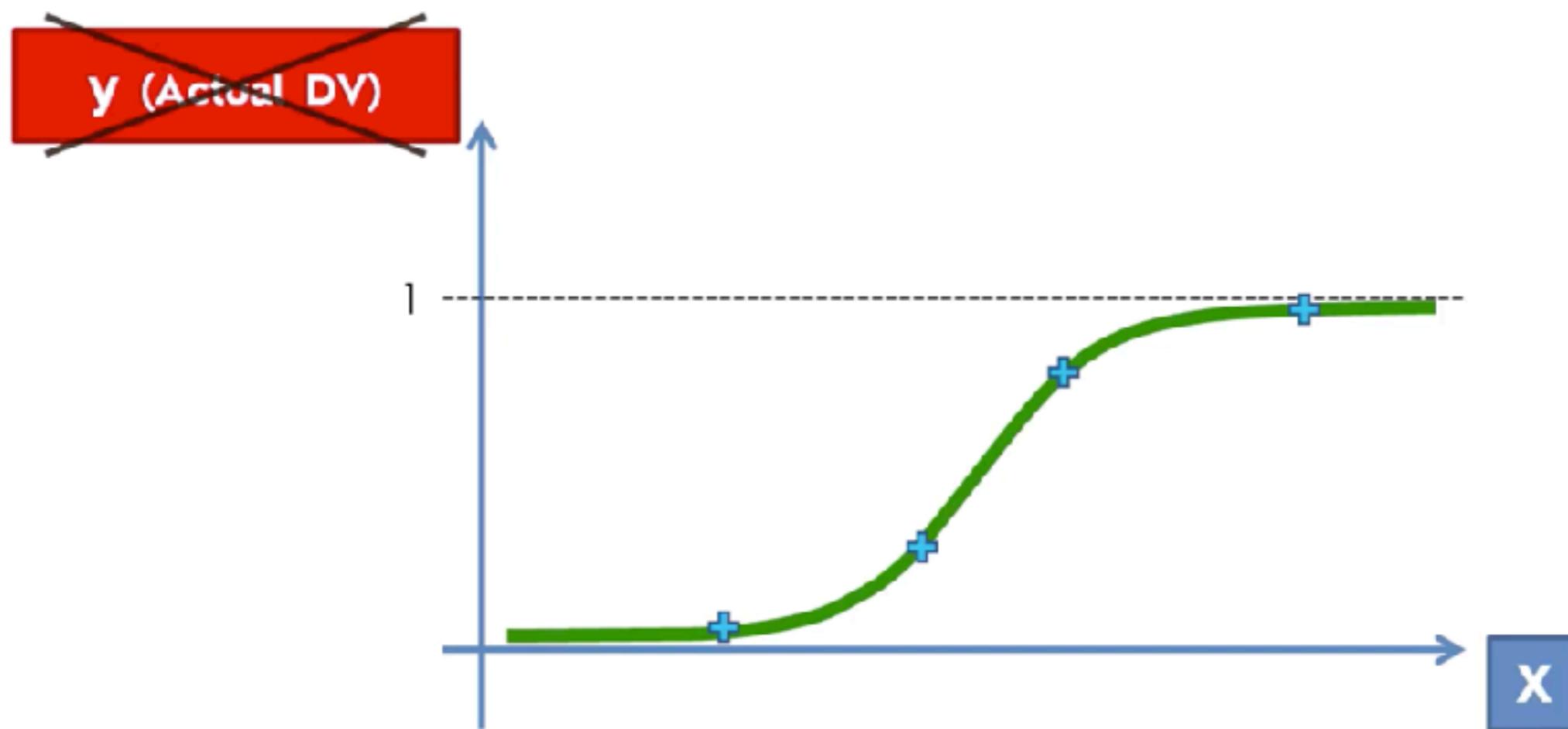
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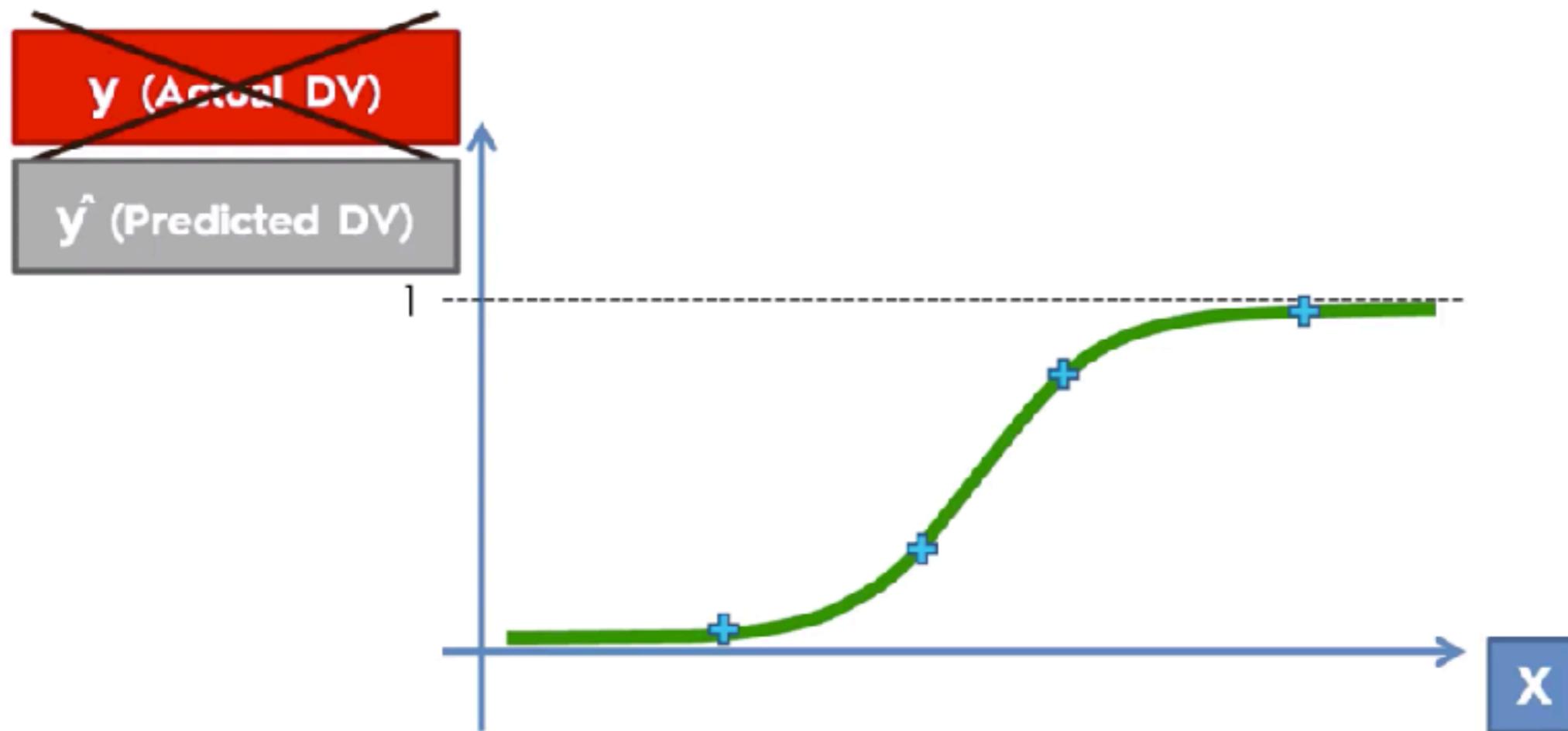
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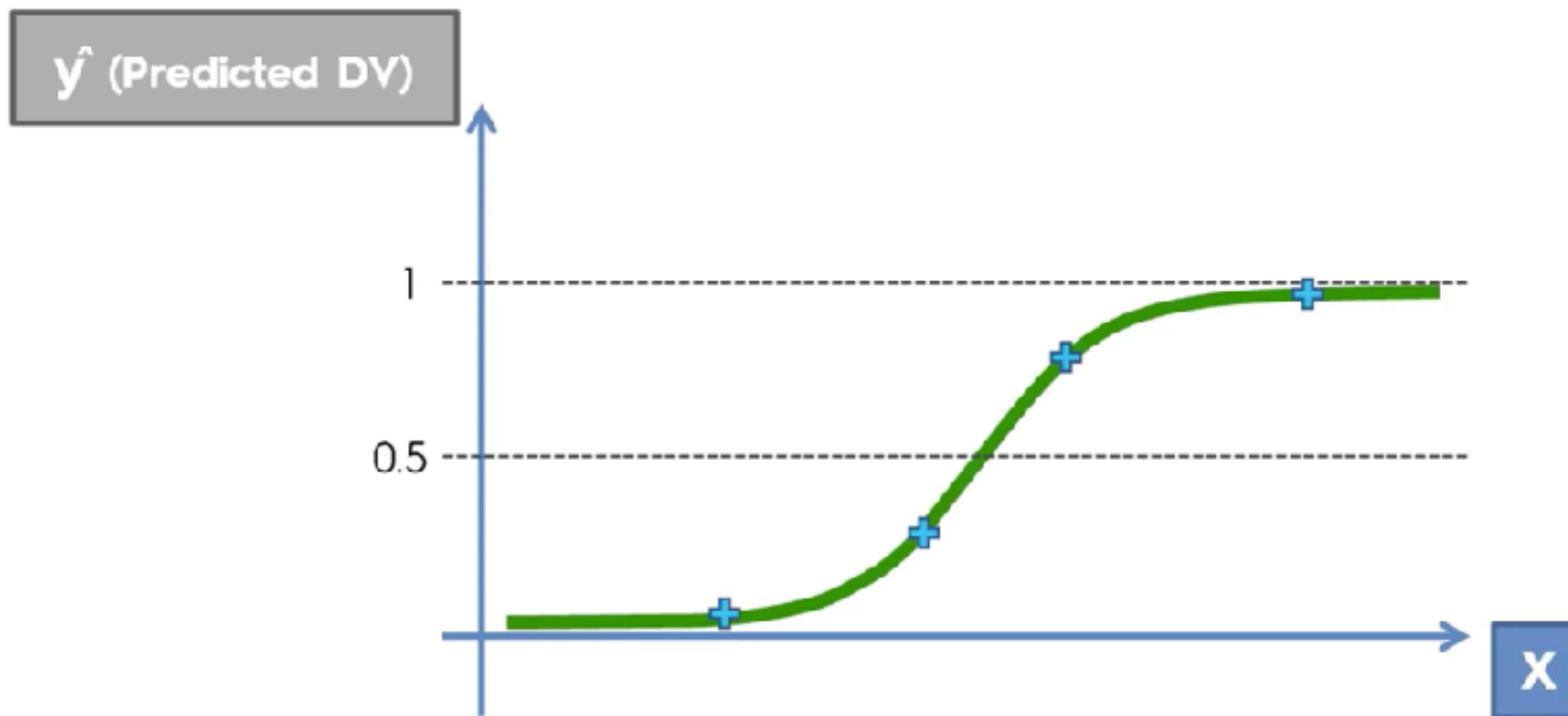
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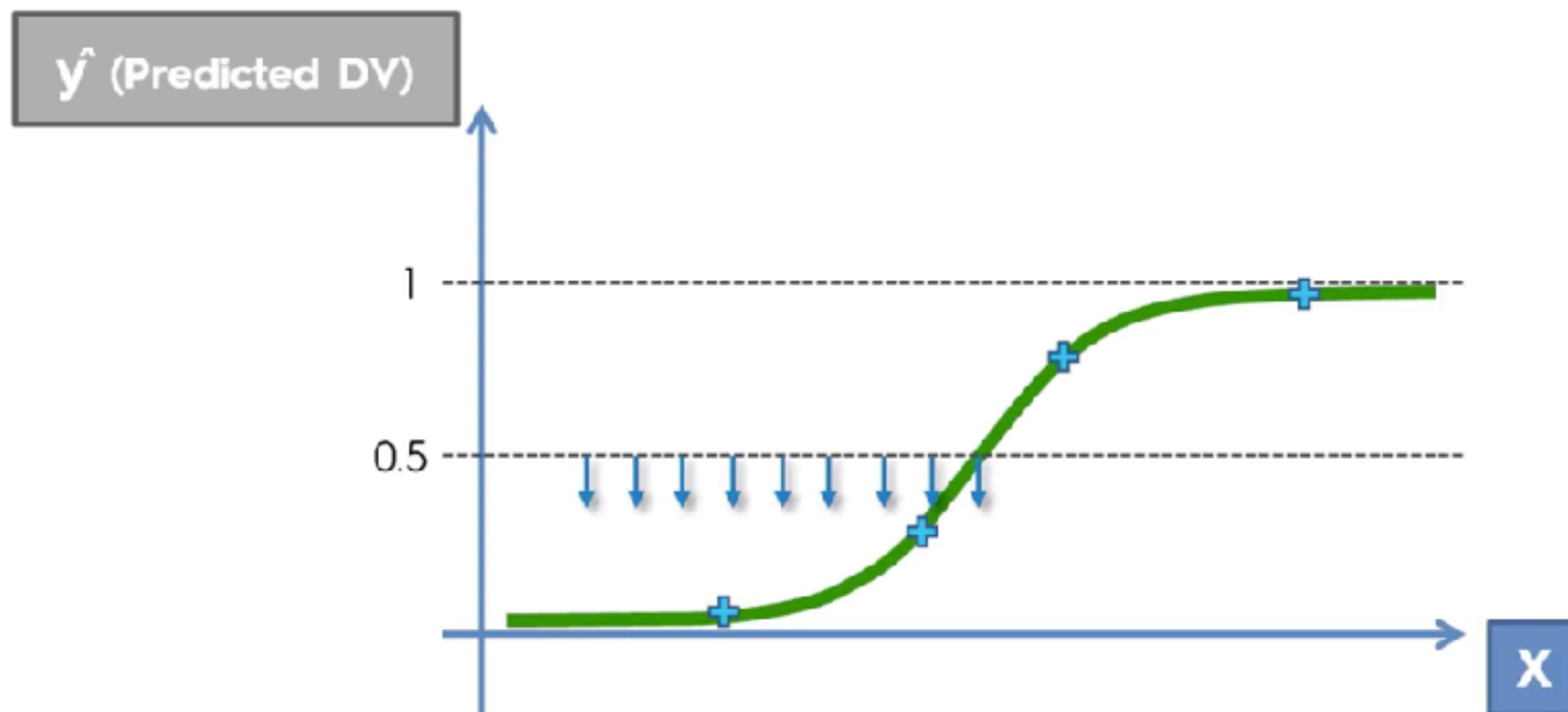
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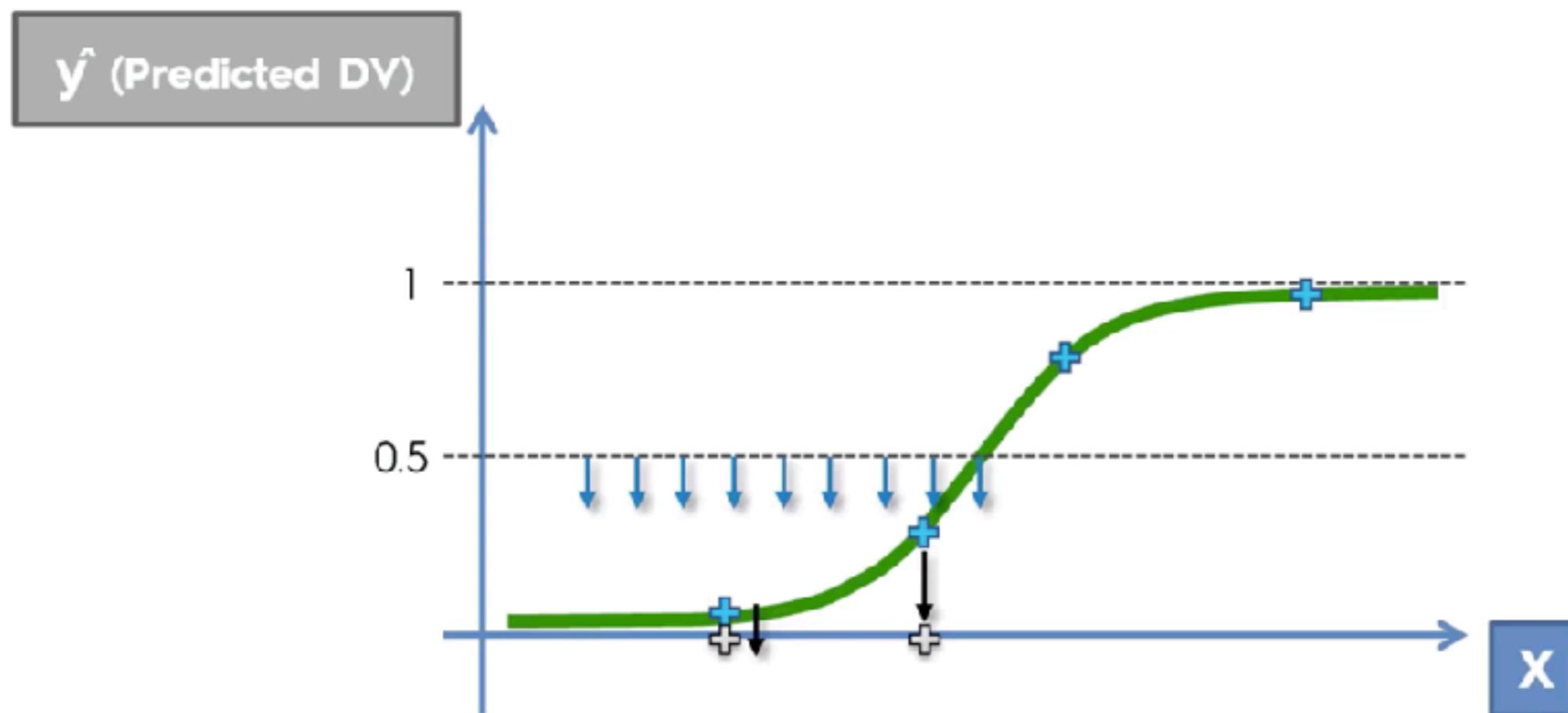
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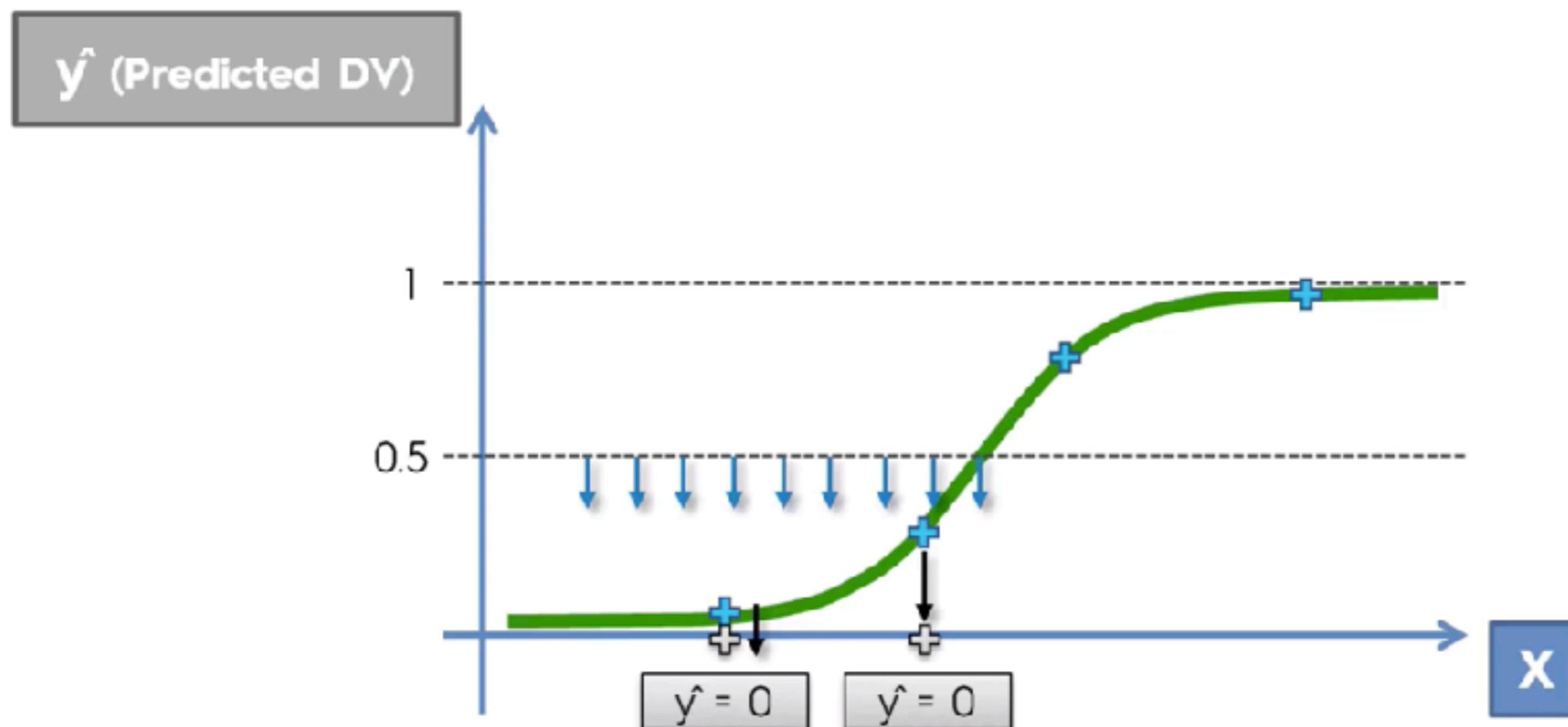
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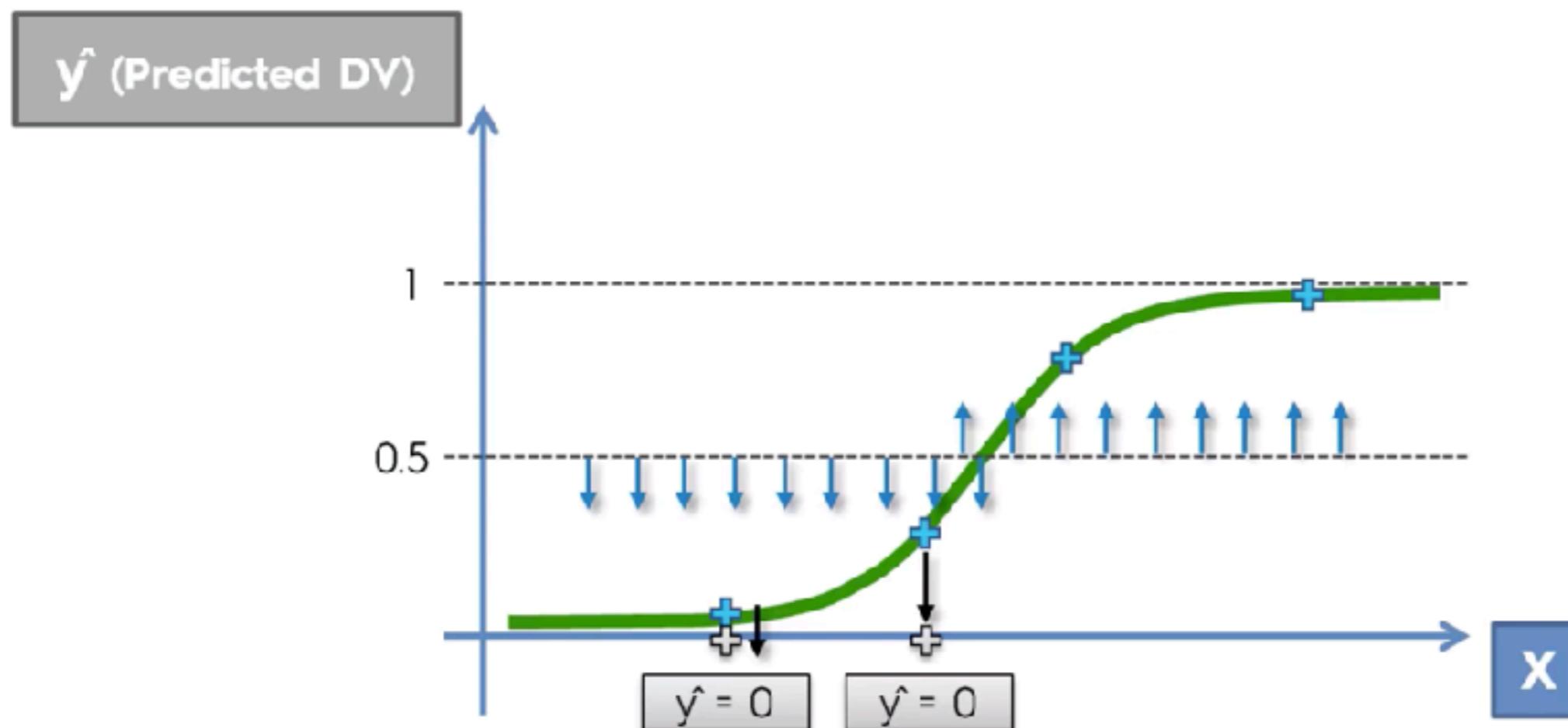
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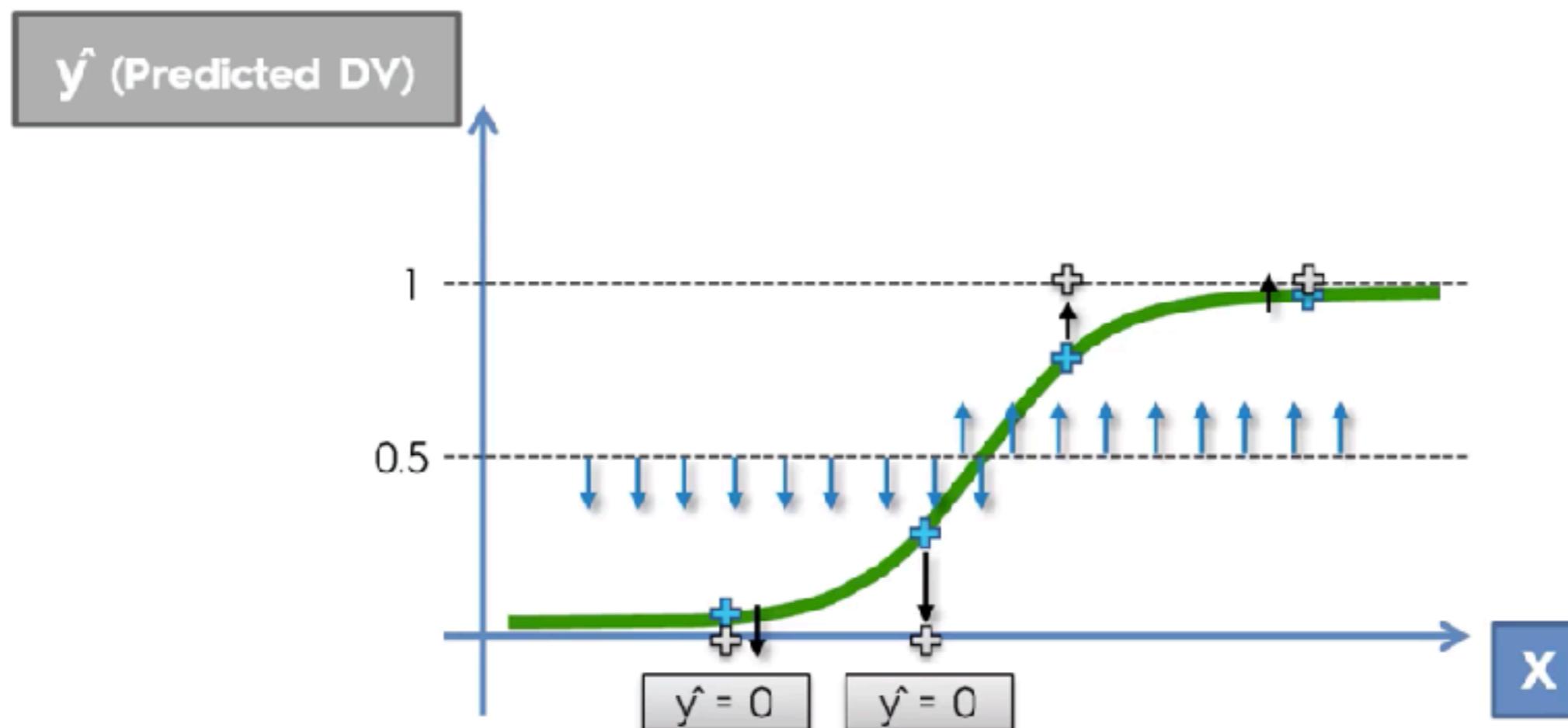
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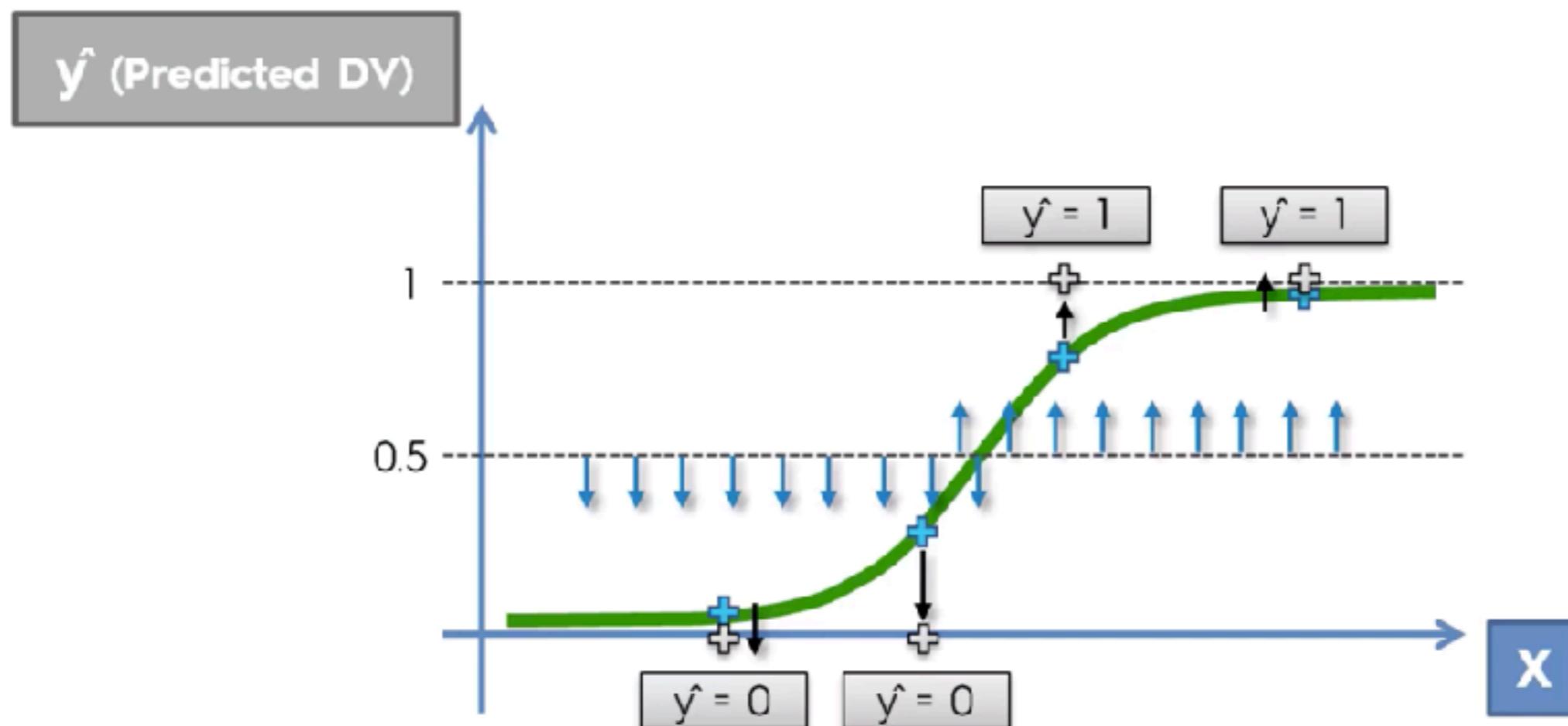
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Logistic Regression



Logistic Regression



Fin.