

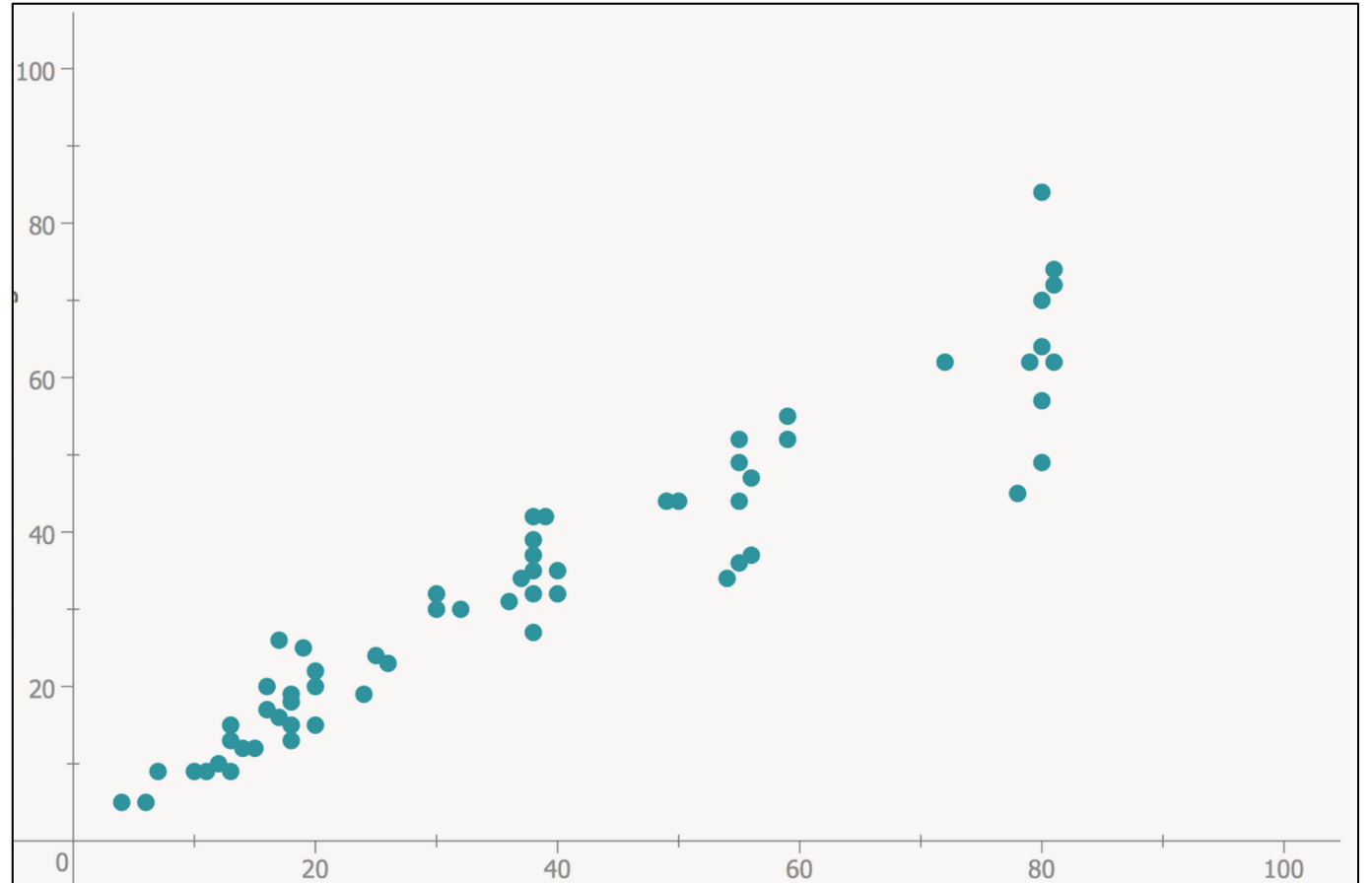
Linear Regression: T-test

Overview

- Linear Data

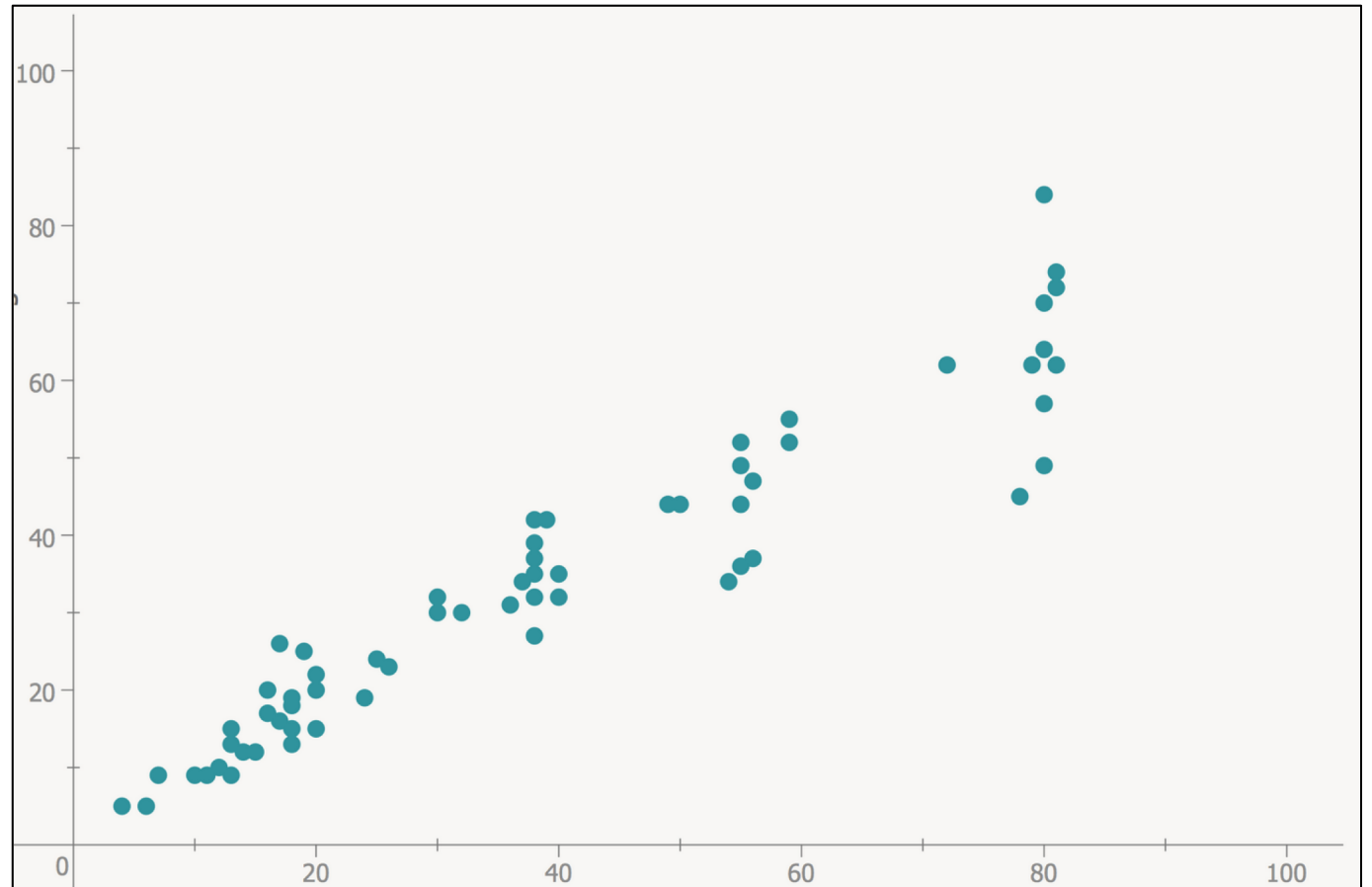
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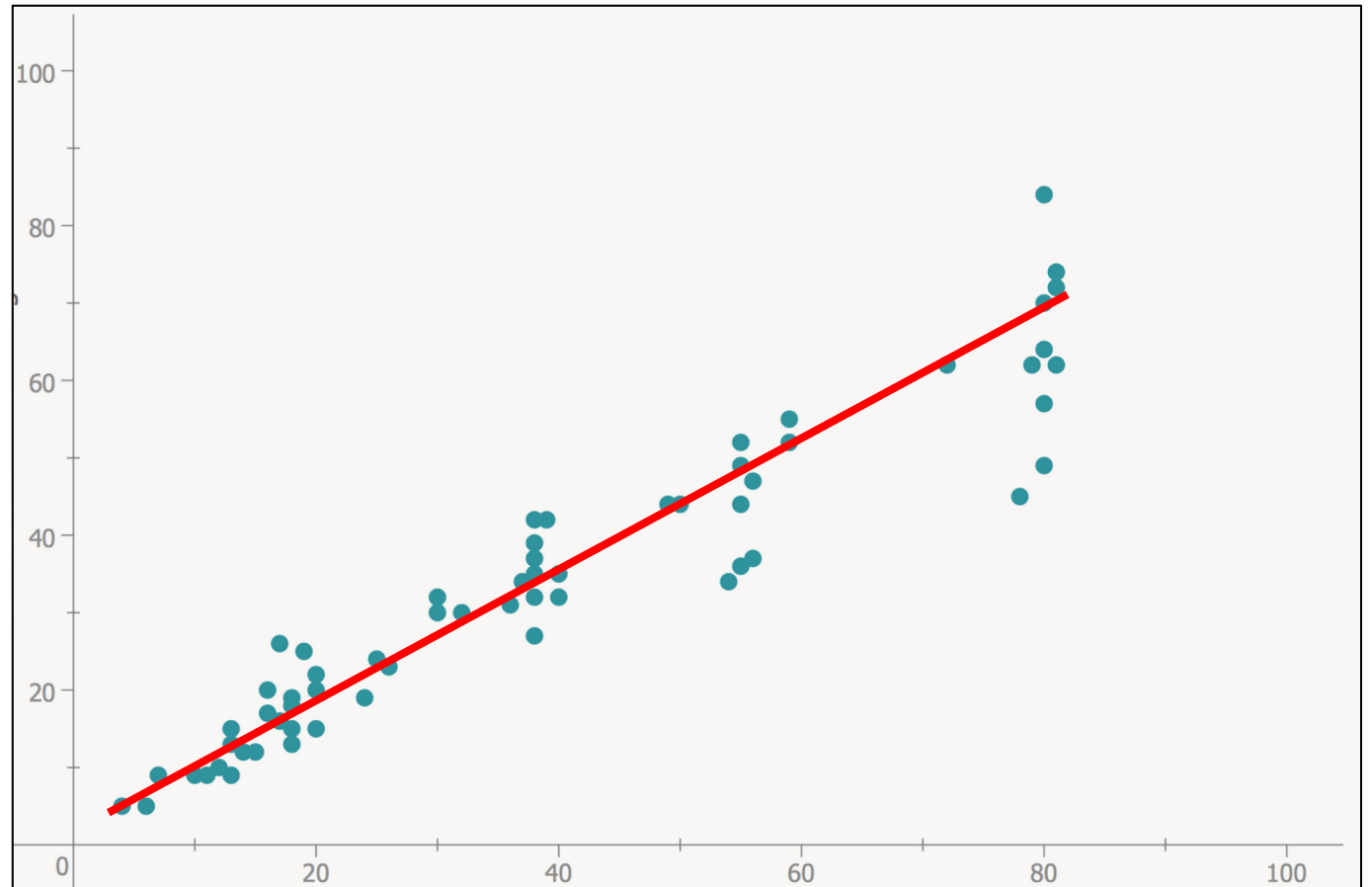
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- Regression Model



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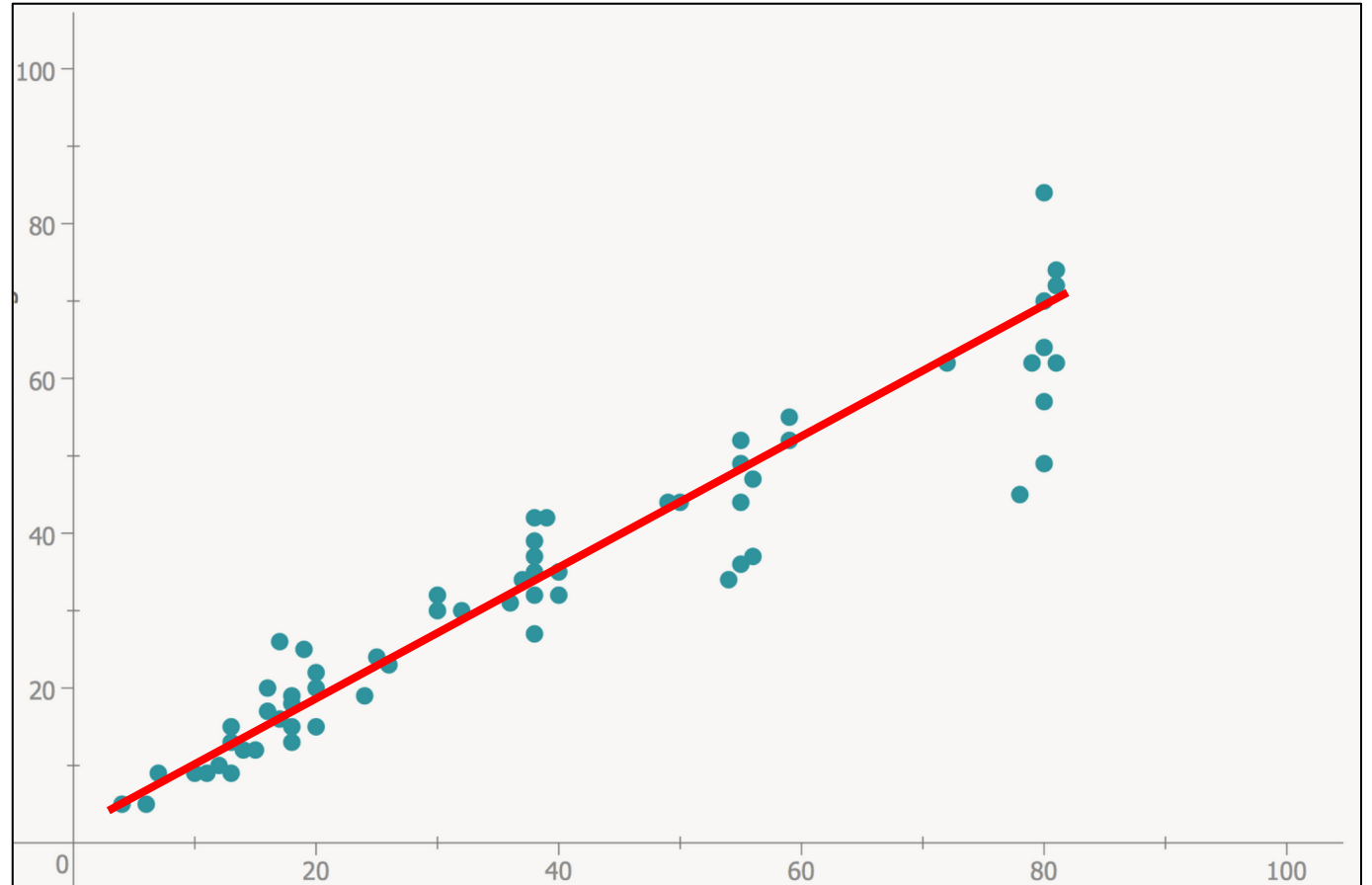
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*But how do we
formally test?*



Hypothesis Test!

- True Regression Line:

$$Y = b_0 + b_1X + \epsilon$$

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Hypothesis Test!

- True Regression Line: $Y = b_0 + b_1X + \epsilon$
- Estimated Regression Line: $Y = \beta_0 + \beta_1X + r$

- H_0 : $\beta_1 = 0$
- H_a : $\beta_1 \neq 0$

T-distribution & T-test

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In other words, $\beta_1 = 0$ is not in our confidence interval!