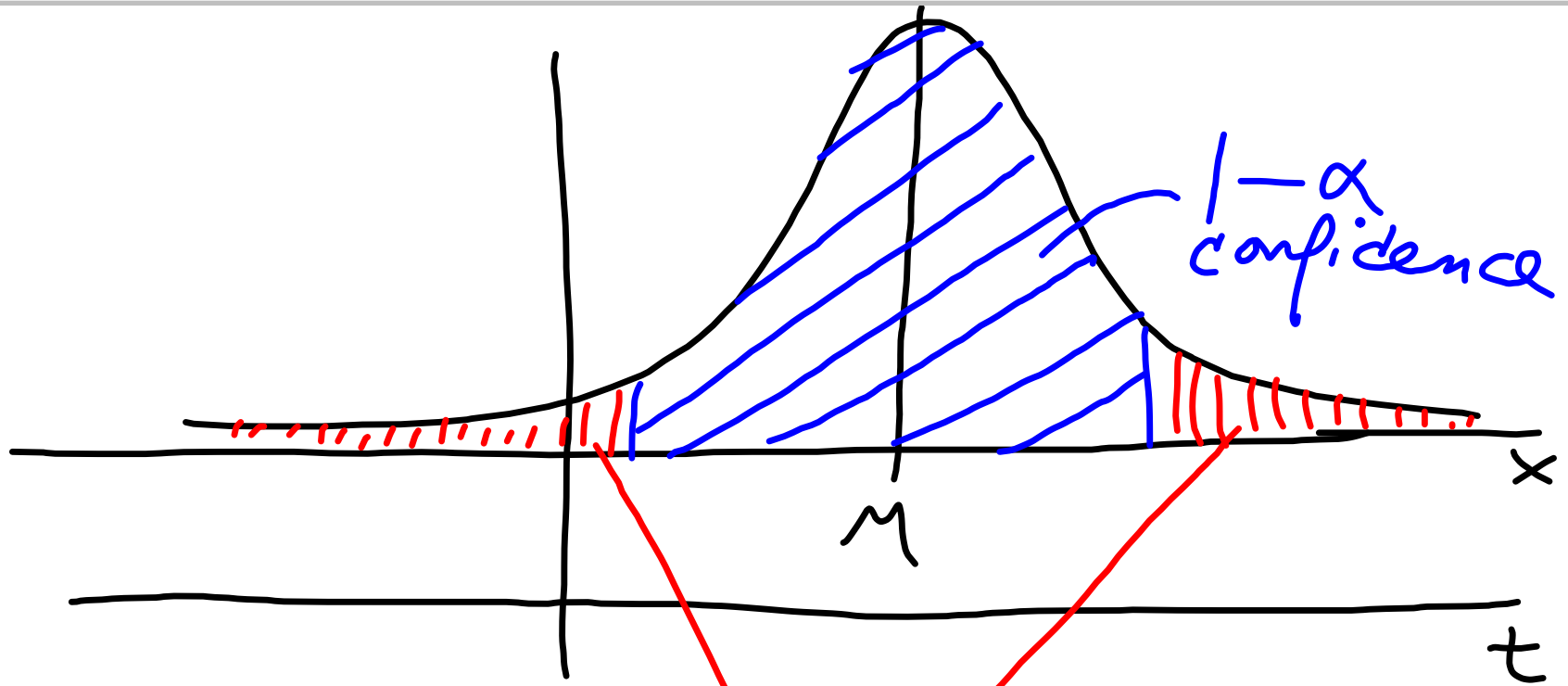


Hypothesis Test 2

t is good for $n \sim 10 \rightarrow \infty$
but t must be used for $n \sim < 30$

t -table : $df = n - 1$

The diagram shows the formula $df = n - 1$ enclosed in a rectangular box. A blue arrow points from the left towards the box. Below the box, the text "degrees of freedom" is written, with an arrow pointing up to the "df" in the formula. To the right, the text "sample size" is written, with an arrow pointing up to the "n" in the formula.



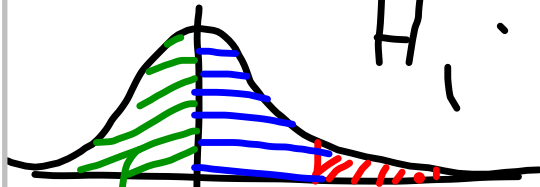
One tail test
 a) upper
 b) lower

not confidence
 α
 2 tail test,
 things are just
 different

Suppose hypothesis

H_0 : diddle is ?

H_1 : diddle is not? $\alpha(2)$



H_0 : children don't have parents w/ mental illness

H_1 : children have parents w/ mental illness

not
biologically
possible

Errors of Hypothesis Testing

Type I - α \leftarrow reject H_0 when you shouldn't

Type II - β \leftarrow accept H_0 when you shouldn't

Ex: $\begin{cases} H_0: \text{Fish length} = 10 \\ H_A: \text{Fish length} \neq 10 \end{cases}$

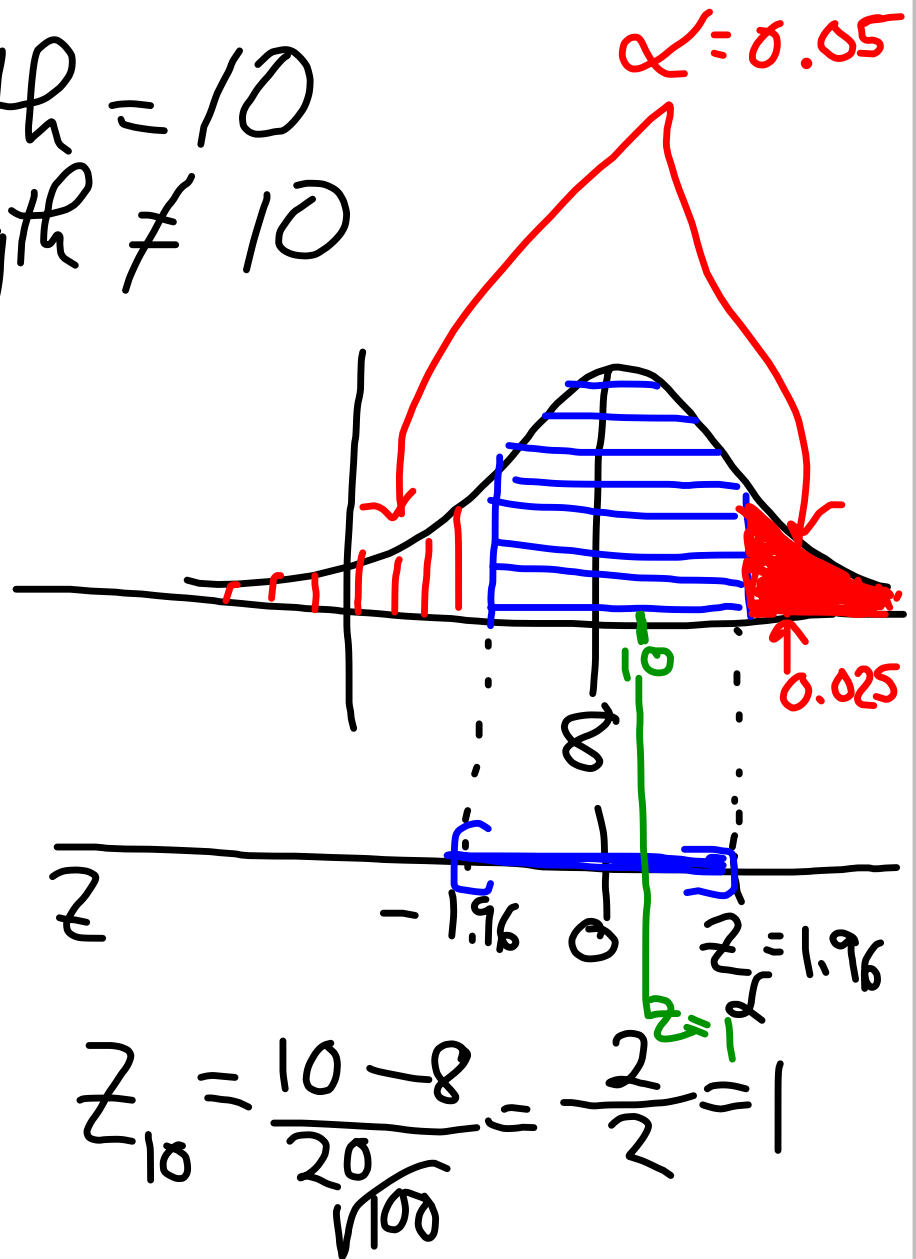
✓ $\bar{x} = 8$

✓ $\sigma_x = 20$

✓ $n = 100$

✓ $Z = \frac{\bar{x} - \mu}{\frac{\sigma_x}{\sqrt{n}}}$

✓ $\alpha = 0.05$



If you can reject H_0 , this does
not \Rightarrow you can accept H_A .
You must test H_A .

EX: H_0 : Average IQ = 150

$\alpha = 0.01$
 $n = 81$

H_A : Average IQ < 150

$\sigma_x = 3$

$\bar{x} = 110$

$$z = \frac{150 - 110}{3/\sqrt{81}}$$

$$= \frac{40}{3/9} = 120$$

