

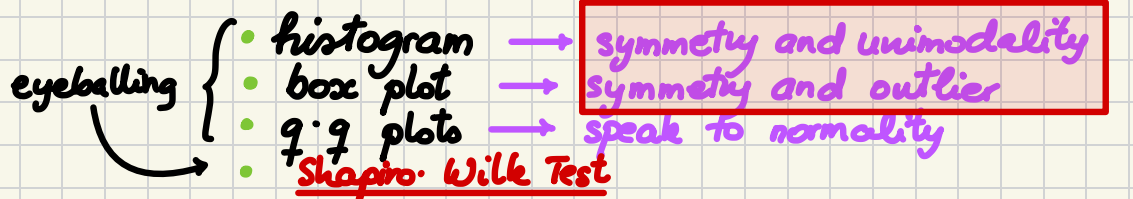
M3396: January 16<sup>th</sup>, 2026.

What if the sample is not normal?

Still, say,  
estimating  $\mu$

How do you triage?

• diagnostics



What if normality fails?

→ Sufficiently large data sets ⇒ CLT

⇒ { z-procedures  
t-procedures

→ Boot Strap

Data Set:

$x_1, \dots, x_n$

Draw  
with replacement

B...the # of  
resamplings

$\bar{x}_1, \bar{x}_2, \dots, \bar{x}_B$

↓  
Create a confidence interval,  
e.g., 2SE or quantile.

e.g.,

$$x_1 = 1$$

$$x_2 = 3$$

$$x_3 = -4$$

$$B = 4$$

$$b=1: 3, 1, 3 \Rightarrow$$

$$\vdots$$

$$b=4$$

$$\bar{x}_1 = \frac{7}{3}$$

$$\vdots$$

$$\bar{x}_4 = \dots$$