

normality — hist ←  
 — Q-Q plot ←

test to test the normality: Shapiro Wilk test

$p(x_i > m_0) = 0.5 \Rightarrow$  use p-value  $\rightarrow$

each  $(x_1, \dots, x_n)$  has a sign (+ or -) ;  $H_0$ : pop median =  $m_0$

$V_+$  = No of (+) signs  $\Rightarrow \sim \text{bin}(n, 0.5)$

$V_-$  = — (-) —  $\sim \text{bin}$

$$V_+ > V_-$$

test if 2 pop. variances are equal.

$H_0$ : they are equal

$H_A$ : — NOT equal.

$\rightarrow$  helps to check the assumption of t-test for 2 indep samples.

Var. test.

large p-value  $\Rightarrow$  equal var

very small p-value  $\rightarrow$  unequal var

$\rightarrow$  2 pop has same var  $\rightarrow \underline{\underline{\sigma^2}}$

parametric

$\Rightarrow$  Z-test  
 t-test

Non-parametric

$\rightarrow$  no distn of data/pop is assumed.

t-test: get test statistic:  $T = 2.5 \sim t_{90}$  distn.  
 $\rightarrow$  p-value.



$$\mu + \sigma$$

Non-distrib