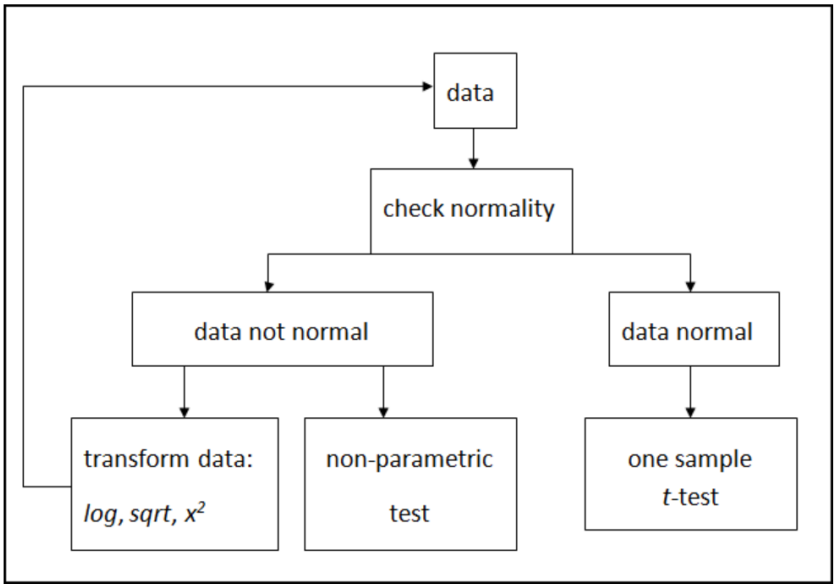
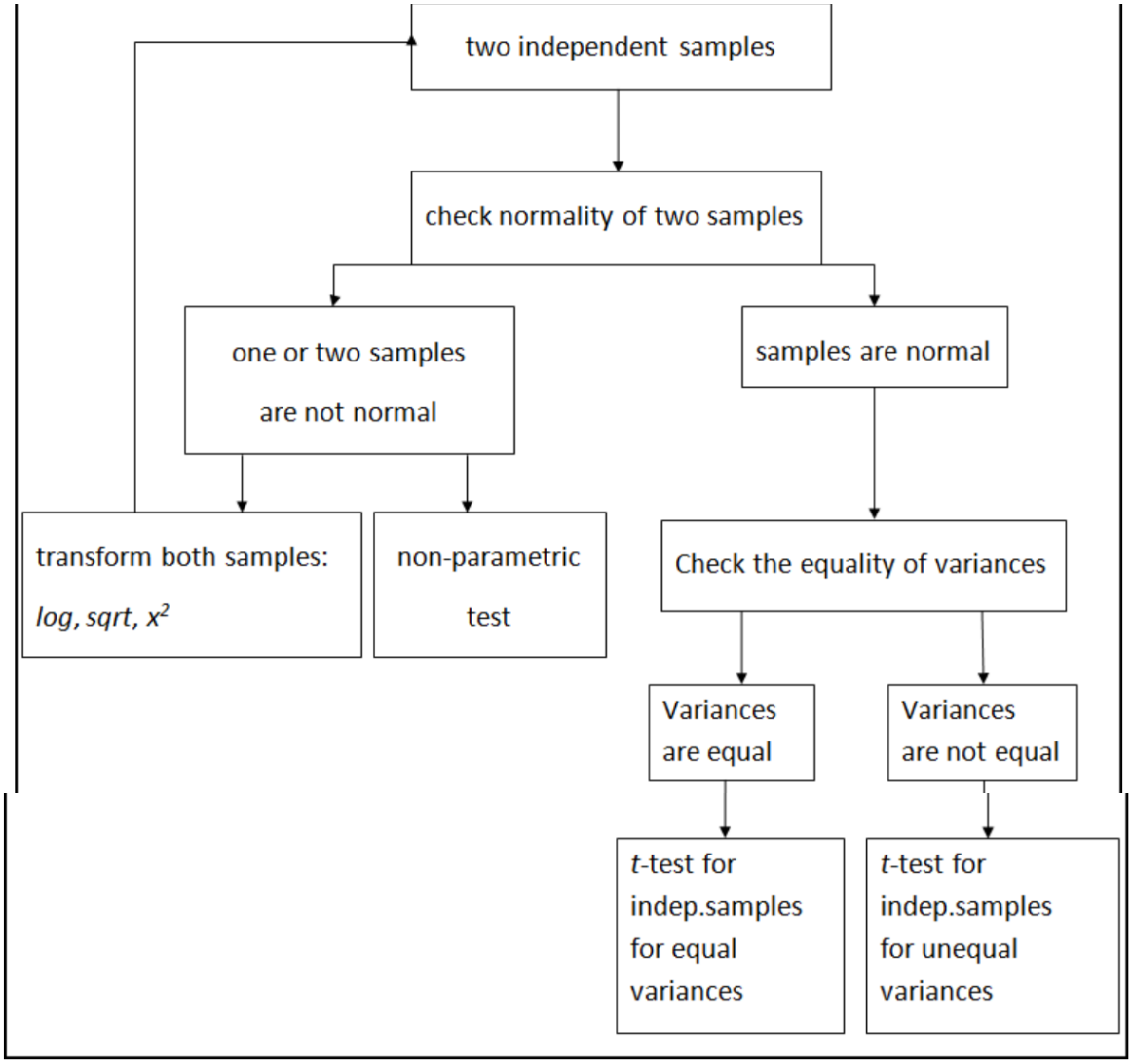
Chapter 8: Statistical Inference for continuous data

1. One sample
   - When sample size > 25, use CLT
   - When sample size is small, use scheme below:



2. Two samples



Chapter 9: Statistical Inference for discrete data

	Continuous variable	**Discrete variable**
One sample	One sample t-test	Test for one proportion
Two independent groups	Two sample t-test	Test for two proportions

- **Testing independence in 2 way contingency tables**

H0: row and column variable is independent
H1: row and column variable is not independent

- 1.1 Raw data: use `table` + `chisq.test`
- 1.2 Summary data: use `xtabs` and `chisq.test`
- 1.3 In case of very few observations

Chapter 10: example of regression analysis

```
res.lm <- lm(Ozone ~ Temp, data = airquality)
summary(res.lm)
```

Formula regression model	Formula argument in *R*
$Z = \beta_0 + \beta_1 X + \beta_2 Y$	`Z ~ X + Y`
$Z = \beta_0 + \beta_1 X + \beta_2 X^2$	`Z ~ X + I(X^2)`
$Z = \beta_1 X$	`Z ~ X -1`