Review

Descriptive statistics

- Measures of location e.g. mean, median, mode
- Measures of spread e.g. standard deviation
- Graphic methods e.g. boxplot, stem-and-leaf plot
  - Symmetric distribution
  - Unsymmetric distribution (skewed to the right / left)

Probability distribution

- Discrete vs. continuous
- Measure of location
- Measure of spread
- Standardization of a normal variable
- Z-table

TABLE 3 The normal distribution

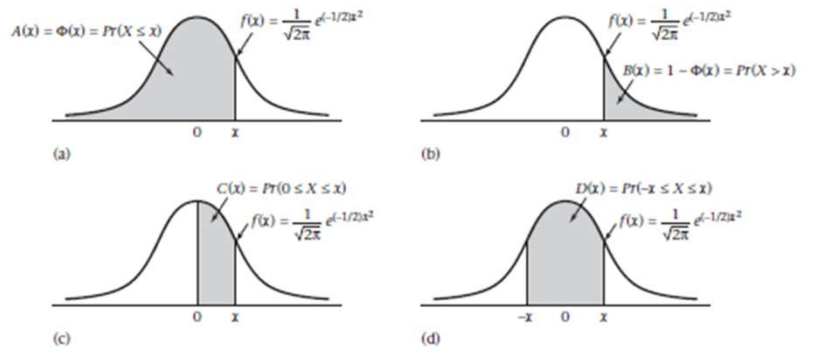


TABLE 3 The normal distribution *(continued)*

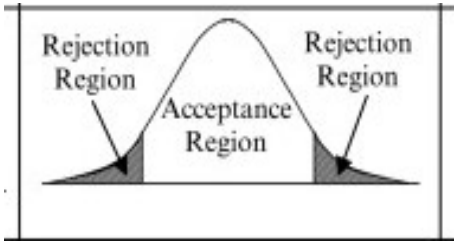
x	A[a]	B[b]	C[c]	D[d]
1.82	.9656	.0344	.4656	.9312
1.83	.9664	.0336	.4664	.9327
1.84	.9671	.0329	.4671	.9342
1.85	.9678	.0322	.4678	.9357
1.86	.9686	.0314	.4686	.9371
1.87	.9693	.0307	.4693	.9385
1.88	.9699	.0301	.4699	.9399
1.89	.9706	.0294	.4706	.9412
1.90	.9713	.0287	.4713	.9426
1.91	.9719	.0281	.4719	.9439
1.92	.9726	.0274	.4726	.9451
1.93	.9732	.0268	.4732	.9464
1.94	.9738	.0262	.4738	.9476
1.95	.9744	.0256	.4744	.9488
1.96	.9750	.0250	.4750	.9500
1.97	.9756	.0244	.4756	.9512
1.98	.9761	.0239	.4761	.9523
1.99	.9767	.0233	.4767	.9534
2.00	.9772	.0228	.4772	.9545
2.01	.9778	.0222	.4778	.9556
2.02	.9783	.0217	.4783	.9566
2.03	.9788	.0212	.4788	.9576
2.04	.9793	.0207	.4793	.9586
2.05	.9798	.0202	.4798	.9596
2.06	.9803	.0197	.4803	.9606
2.07	.9808	.0192	.4808	.9615
2.08	.9812	.0188	.4812	.9625
2.09	.9817	.0183	.4817	.9634
2.10	.9821	.0179	.4821	.9643
2.11	.9826	.0174	.4826	.9651
2.12	.9830	.0170	.4830	.9660
2.13	.9834	.0166	.4834	.9668
2.14	.9838	.0162	.4838	.9676
2.15	.9842	.0158	.4842	.9684
2.16	.9846	.0154	.4846	.9692
2.17	.9850	.0150	.4850	.9700
2.18	.9854	.0146	.4854	.9707
2.19	.9857	.0143	.4857	.9715
2.20	.9861	.0139	.4861	.9722
2.21	.9864	.0136	.4864	.9729
2.22	.9868	.0132	.4868	.9736
2.23	.9871	.0129	.4871	.9743
2.24	.9875	.0125	.4875	.9749
2.25	.9878	.0122	.4878	.9756
2.26	.9881	.0119	.4881	.9762
2.27	.9884	.0116	.4884	.9768
2.28	.9887	.0113	.4887	.9774
2.29	.9890	.0110	.4890	.9780
2.30	.9893	.0107	.4893	.9786
2.31	.9896	.0104	.4896	.9791
2.32	.9898	.0102	.4898	.9797
2.33	.9901	.0099	.4901	.9802
2.34	.9904	.0096	.4904	.9807
2.35	.9906	.0094	.4906	.9812
2.36	.9909	.0091	.4909	.9817
2.37	.9911	.0089	.4911	.9822
2.38	.9913	.0087	.4913	.9827

Hypothesis testing: one-sample inference

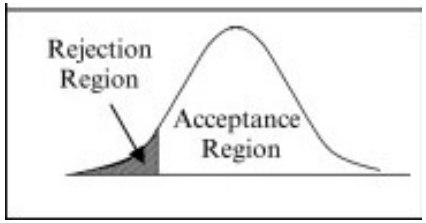
- Type 1 error
- Type 2 error

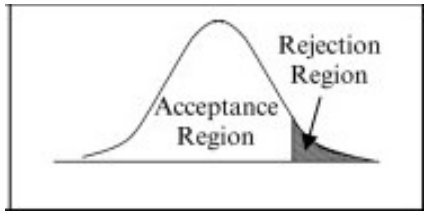
Your Decision Based On a Random Sample	Given the Null Hypothesis Is: True	Given the Null Hypothesis Is: False
Reject	Type I Error	Correct Decision
Do Not Reject	Correct Decision	Type II Error

- Two-sided test



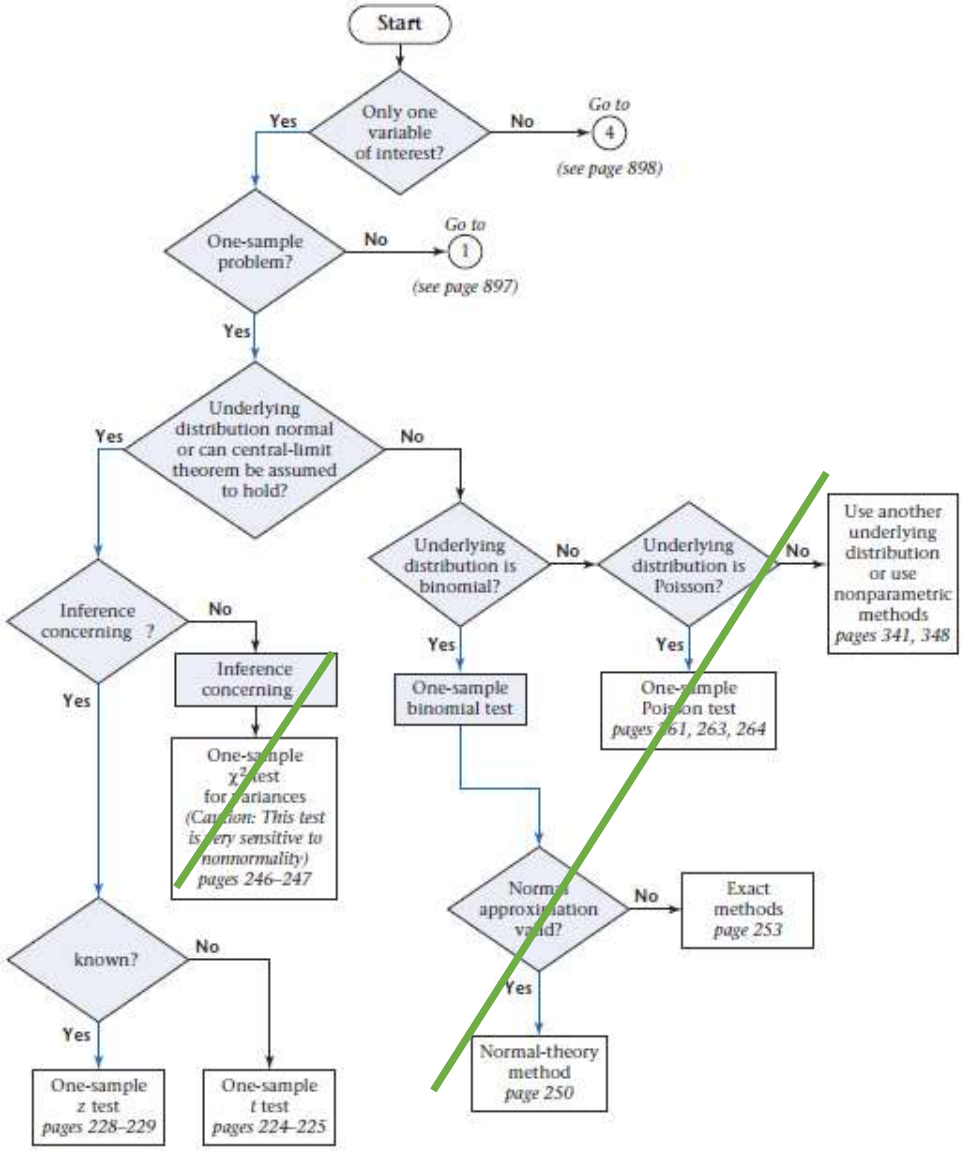
- One-sided test





- P-value
- Z-test (Normal distribution table)
- T-test (t distribution table)

FIGURE 7.18 Flowchart for appropriate methods of statistical inference



Hypothesis testing: two-sample inference

Figure 8.10 Strategy for testing for the equality of means in two independent, normally distributed samples $F = s_1^2/s_2^2$

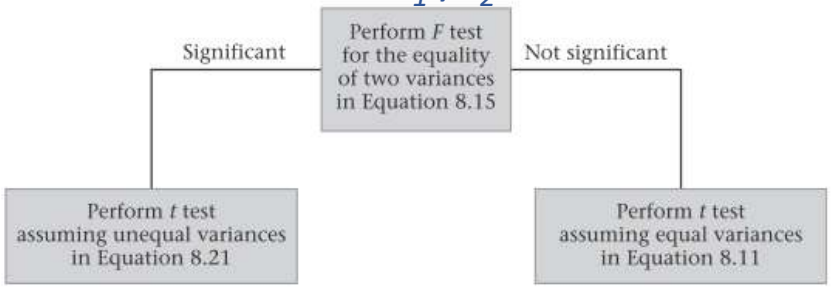


FIGURE 8.13 Flowchart summarizing two-sample statistical inference—normal-theory methods