

Multiple Choice Section

- 1 Which of the following statements are true?
 - I. Like the normal, t -distributions are always symmetric.
 - II. Like the normal, t -distributions are always mound-shaped.
 - III. The t -distributions have less spread than the normal, that is, they have less probability in the tails and more in the center than the normal.
 - (A) II only
 - (B) I and II
 - (C) I and III
 - (D) II and III
 - (E) I, II, and III

- 2 State the *critical t-value* for a sample of 40 people with a sample standard deviation of 4 and sample mean of 12 at the 90% confidence level?:
 - A. 1.572
 - B. 1.685
 - C. 1.977
 - D. 2.153
 - E. 2.279

- 3 One gallon of gasoline is put in each of 30 test autos, and the resulting mileage figures are tabulated with $\bar{x} = 28.5$ and $s = 1.2$. Determine a 95% confidence interval estimate of the mean mileage.
 - (A) (28.46, 28.54)
 - (B) (28.42, 28.58)
 - (C) (28.1, 28.9)
 - (D) (27.36, 29.64)
 - (E) (27.3, 29.7)

- 4 Acute renal graft rejection can occur years after the graft. In one study (*The Lancet*, December 24, 1994, page 1737), 21 patients showed such late acute rejection when the ages of their grafts (in years) were 9, 2, 7, 1, 4, 7, 9, 6, 2, 3, 7, 6, 2, 3, 1, 2, 3, 1, 1, 2, and 7, respectively. Establish a 90% confidence interval estimate for the ages of renal grafts that undergo late acute rejection.
 - (A) 2.024 ± 0.799
 - (B) 2.024 ± 1.725
 - (C) 4.048 ± 0.799
 - (D) 4.048 ± 1.041
 - (E) 4.048 ± 1.725

Short Answer Section

9. An SRS of ten brands of breakfast cereals is tested for the number of calories per serving. The following data result: 185, 190, 195, 200, 205, 205, 210, 210, 225, 230.
- Establish a 95% confidence interval estimate for the mean number of calories for servings of breakfast cereals. Be sure to check assumptions.

10. The following frequency table shows the results of a study where students were asked "How many absences did you have the previous school year?" Find a 90% confidence interval.

Absences	Frequency
0	8
1	12
2	11
3	7
4	5
5	3
6	1
7	1

Book Review:

From pages 522-523

R8.5

R8.8

From pages 524-525

T8.3

T8.5

T8.12

T8.13



Multiple Choice Section

1 Which of the following statements are true?

- I. Like the normal, t -distributions are always symmetric. **T**
- II. Like the normal, t -distributions are always mound-shaped. **T**
- III. The t -distributions have less spread than the normal, that is, they have less probability in the tails and more in the center than the normal. **F**

- (A) II only
- (B) I and II**
- (C) I and III
- (D) II and III
- (E) I, II, and III

more

2 State the *critical t-value* for a sample of 40 people with a sample standard deviation of 4 and sample mean of 12 at the 90% confidence level?:

- A. 1.572
- (B) 1.685**
- C. 1.977
- D. 2.153
- E. 2.279

Find a T .9 between
DF = 39

3 One gallon of gasoline is put in each of 30 test autos, and the resulting mileage figures are tabulated with $\bar{x} = 28.5$ and $s = 1.2$. Determine a 95% confidence interval estimate of the mean mileage.

- (A) (28.46, 28.54)
- (B) (28.42, 28.58)
- (C) (28.1, 28.9)**
- (D) (27.36, 29.64)
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T-Test on Mean

4 Acute renal graft rejection can occur years after the graft. In one study (*The Lancet*, December 24, 1994, page 1737), 21 patients showed such late acute rejection when the ages of their grafts (in years) were 9, 2, 7, 1, 4, 7, 9, 6, 2, 3, 7, 6, 2, 3, 1, 2, 3, 1, 1, 2, and 7, respectively. Establish a 90% confidence interval estimate for the ages of renal grafts that undergo late acute rejection.

- (A) 2.024 ± 0.799
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- (E) 4.048 ± 1.725

Data in L_1
T-Test on L_1

Short Answer Section

9. An SRS of ten brands of breakfast cereals is tested for the number of calories per serving. The following data result: 185, 190, 195, 200, 205, 205, 210, 210, 225, 230.

Establish a 95% confidence interval estimate for the mean number of calories for servings of breakfast cereals. Be sure to check assumptions.

Data in L_1
T-Test on L_1

$$n = 10 \quad DF = 9$$

$$\bar{x} = 205.5 \quad T = 2.26$$

$$\sigma_{\bar{x}} = 4.5$$

We are 95% conf. that the true mean calories is captured in the interval from 195.32 and 215.68.

$$\text{error} = 10.18$$

$$\text{interval} = (195.32, 215.68)$$

10. The following frequency table shows the results of a study where students were asked "How many absences did you have the previous school year?" Find a 90% confidence interval.

Absences	Frequency
0	8
1	12
2	11
3	7
4	5
5	3
6	1
7	1

Data in L_1, L_2
Basic Stats on L_1, L_2

$$\bar{x} = 2.146 \quad S_x = 1.695 \quad n = 48$$

T-Test on Mean

$$\sigma_{\bar{x}} = .245 \quad T = 1.678$$

$$DF = 47$$

$$\text{error} = .41 \quad \text{interval} = (1.74, 2.56)$$

We are 90% confident that the true mean number of absences is captured in the interval from 1.74 to 2.56.

Book Review:

From pages 522-523
R8.5
R8.8

From pages 524-525
T8.3
T8.5
T8.12
T8.13

video
online