STA 102 Spring 2002
Chapter 9 Solutions to Suggested Even Problems

2, 4 not shown

6.
a) 5% of the area lies to the right of t = 2.015.
b) Only 1% of the area lies to the left of t = -3.365.
c) Since 0.5% of the area lies to the left of t = -4.032 and another 5% lies to the right of t = 4.032, 99% of the area lies between the two values.
d) The value t = 2.571 cuts off the upper 2.5 % of the distribution.

8.
a) CI = (3.96, 5.02)
b) CI = (4.06, 4.92)
c) CI = (3.32, 4.10)
d) It is assumed that the underlying distributions for FVC and FEV_1 are approximately normally distributed.

10.
a) CI = (105.6, 120.0)
b) The confidence interval does not contain the value 100. As a result, we conclude that the mean percentage of ideal body weight for the insulin-dependent diabetics is different from 100%; the true percentage is higher.

12.
a) A two-sided CI for μ is (86.5, 89.4) (using, say, S-Plus)
b) We are 95% confident that this interval covers the true population mean serum zinc level. In other words, if 100 random samples of size n=462 are selected from the population and 100 CIs calculated in this manner, approximately 95 of them will contain the true mean μ.
c) A 90% CI for u is (87.7, 89.2)
d) The 90% CI for μ is shorter than the corresponding 95% interval.