(SPSS test 2) Interpretation Practice 2 Answers

1. a) A one sample t-test was conducted on SAT verbal scores for the participants who received the advanced training, and their verbal scores were compared to the mean population score of 500. The results revealed that verbal scores for participants who received the advanced training were significantly higher (M = 589.20, SD = 124.36) than the population, t (24) = 3.59, $p < .05$, $d = .72$.

b) $CI_{.90}$ = 546.65 to 631.75. We are 90% certain (i.e., we would be correct in this estimate 90 times out of 100) that the mean of the population from which our sample came ranged from a low of 546.65 to a high of 631.75.
c) The standard error of the mean tells us how much on average we can expect the sample mean to differ from the population mean. For this data, we can expect the sample mean to differ from the population by 24.87 on average.

2. a) A total of 50 participants participated in a 2 (training: standard/advanced) x 2 (confidence: before/after) mixed design in which training condition is the between subjects factor and the confidence level is the within subjects factor. An independent samples t-test conducted on SAT verbal scores with training methods as the independent variable revealed that there was not a significant difference between standard training methods (M = 542.80, SD = 93.83) and advanced training methods (M = 589.20, SD = 124.362) for SAT verbal scores, t (48) = -1.49, $p > .05$.

b) Homogeneity of variance has not been violated. This information can be found in the output under Levene's Test for Equality of Variance. We know that equal variances can be assumed because Levene's test is not significant (the significance level or p value is not less than .05), which means that the two samples being compared can be assumed to have been drawn from populations with equal variances.

3. A related samples t-test was conducted on confidence levels prior to studying for the SAT and confidence levels after studying for only the group that received advanced training. The results revealed a significant difference between confidence scores prior to studying (M = 6.24, SD = 2.49) and confidence scores after studying (M = 8.56, SD = 1.26), t (24) = -4.96, $p < .05$, d = -.99.