

## Independent Samples T-Tests Solutions

**1.**

$$S_{x1-x2} = 1.296$$

$$df = 18$$

$$t_{crit} = +/- 2.101$$

$$t_{obt} = -.540$$

We fail to reject the null hypothesis; there is not a significant difference in exam scores between the types of review,  $t(18) = -.54, p > .05$

$CI_{90} = -.7 +/- 1.734 (1.296)$ , which means that 90 times out of 100, the difference between our population means will be between -2.95 and 1.55.

Cohen's  $d = .24$ .

**2.**

$$Sp^2 = 2.8$$

$$S_{x1-x2} = .778$$

$$df = 17$$

$$t_{crit} = - 1.74$$

$$t_{obt} = -6.66$$

We reject the null hypothesis; the experimental method significantly reduces anxiety,  $t(17) = -6.66, p < .05$ .

$CI_{95} = -5.18 +/- 2.110 (.778)$ , which means that 95 times out of 100, the difference between our population means will be between -6.82 and -3.54.

Cohen's  $d = 3.1$

**3.**

$$S_{x1-x2} = 2.71$$

$$df = 14$$

$$t_{crit} = +/- 2.145$$

$$t_{obt} = -.877$$

We fail to reject the null hypothesis; there is not a significant difference in depression scores between college students who sunbathed and those who did not,

$t(14) = -.876, p > .05$ .

$CI_{95} = -2.375 +/- 2.145 (2.71)$ , which means that 95 times out of 100, the difference between our population means will be between -8.18 and 3.43.

Cohen's  $d = .44$ .

**4.**

$$S_{x_1-x_2} = 2.09$$

$$df = 23$$

$$t_{crit} = -1.714$$

$$t_{obt} = -.421$$

We fail to reject the null hypothesis; children who read scary stories do not have significantly more nightmares than children who read cheerful stories,  $t(23) = -.421, p > .05$ .

$CI_{95} = -.882 \pm 2.069 (2.09)$ , which means that 95 times out of 100, the difference between our population means will be between -5.21 and 3.45.

Cohen's  $d = .18$ .