

1. Sum of $x_1 = 889$
Mean of $x_1 = 88.9$
Sum of $x_1^2 = 79,127$
SS of $x_1 = 94.9$
Variance of $x_1 = 10.54$
Standard Deviation of $x_1 = 3.25$
Sum of $x_2 = 896$
Mean of $x_2 = 89.6$
Sum of $x_2^2 = 80,338$
SS of $x_2 = 56.4$
Variance of $x_2 = 6.27$
Standard Deviation of $x_2 = 2.50$
 $S_{x_1-x_2} = 1.296$
 $df = 18$
 $t_{crit} = +/- 2.101$
 $t_{obt} = -.540$

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 1.95.

Cohen's $d = .24$.

2. Sum of $x_1 = 42$
Mean of $x_1 = 3.82$
Sum of $x_1^2 = 196$
SS of $x_1 = 35.64$
Variance of $x_1 = 3.57$
Standard Deviation of $x_1 = 1.89$
Sum of $x_2 = 72$
Mean of $x_2 = 9$
Sum of $x_2^2 = 660$
SS of $x_2 = 12$
Variance of $x_2 = 1.72$
Standard Deviation of $x_2 = 1.31$
 $Sp^2 = 2.8$
 $S_{x_1-x_2} = .778$
 $df = 17$
 $t_{crit} = - 1.74$
 $t_{obt} = -6.66$

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

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

Cohen's $d = 1.48$.

3. Sum of $x_1 = 97$

Mean of $x_1 = 12.125$

Sum of $x_1^2 = 1317$

SS of $x_1 = 140.88$

Variance of $x_1 = 20.16$

Standard Deviation of $x_1 = 4.49$

Sum of $x_2 = 116$

Mean $x_2 = 14.5$

Sum of $x_2^2 = 1952$

SS of $x_2 = 270$

Variance of $x_2 = 38.56$

Standard Deviation of $x_2 = 6.21$

$S_{x_1-x_2} = 2.71$

$df = 14$

$t_{crit} = \pm 2.145$

$t_{obt} = -.877$

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,

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

$CI_{95} = -2.375 \pm 2.145 (2.71)$, 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. Sum of $x_1 = 89$

Mean of $x_1 = 5.56$

SS of $x_1 = 489.94$

Variance of $x_1 = 32.66$

Standard Deviation of $x_1 = 5.72$

Sum of $x_2 = 58$

Mean $x_2 = 6.44$

SS of $x_2 = 90.22$

Variance of $x_2 = 11.28$

Standard Deviation of $x_2 = 3.36$

$S_{x_1-x_2} = 2.09$

$df = 23$

$t_{crit} = -1.714$

$t_{obt} = -.421$

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 $d = .18$.