STATS 205: Homework Assignment 4

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Solution to Problem 1

```
ptsd_matrix <- matrix(c(29, 7, 21, 30), nrow = 2, ncol = 2, byrow = TRUE, dimnames = list(c("Yes", "No"
```

```
##     Battered women
## Yes             29
## No              21
##     Maritally distressed women who had not experienced battering
## Yes                                                           7
## No                                                           30
```

```
prop.test(ptsd_matrix, correct = F, alternative = "two.sided")
```

```
##
##  2-sample test for equality of proportions without continuity
##  correction
##
## data:  ptsd_matrix
## X-squared = 13.389, df = 1, p-value = 0.0002531
## alternative hypothesis: two.sided
## 95 percent confidence interval:
##  0.2068191 0.5807626
## sample estimates:
##    prop 1    prop 2
## 0.8055556 0.4117647
```

The P-value for `2-sample test for equality of proportions without continuity correction` is 0.0002531, which is significant at the $\alpha = 0.05$ level. There is strong evidence that there is a significant difference in the PTSD rates for battered women versus maritally distressed women (who had not experienced battering).