



R Code for Examples in the book
“Statistics: The Art and Science of Learning from Data”
by Agresti, Franklin and Klingenberg, 5th edition

Chapter 15

Example 2: Tanning Studio vs. Lotion – P-Value for Wilcoxon Test

Reading in data

```
lotion <- c(2, 4, 5)  
tan <- c(1, 3)
```

To perform a Wilcoxon Test, you can use the `wilcox.test()` function.

```
wilcox.test(lotion, tan, conf.int = TRUE)
```

```
##  
## Wilcoxon rank sum exact test  
##  
## data: lotion and tan  
## W = 5, p-value = 0.4  
## alternative hypothesis: true location shift is not equal to 0  
## 80 percent confidence interval:  
## -1 4  
## sample estimates:  
## difference in location  
## 1.5
```

Note that R subtracts $n1 * (n1 + 1) / 2$ from the test statistic where $n1$ is the sample size in group 1; other statistical softwares may not necessarily do the same