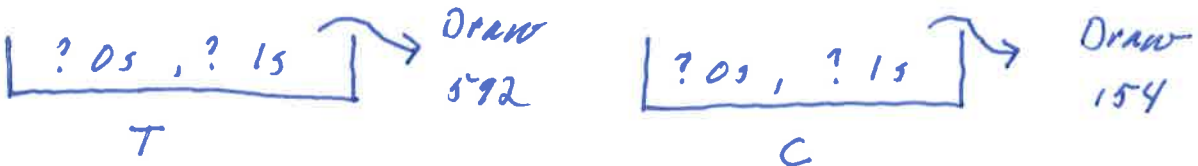


1. When convicts are released from prison, they have no money and there is a high rate of "recidivism", the released prisoners return to crime and are arrested again. The Department of Labor ran a randomized controlled experiment to find out. There were 592 prisoners assigned to the treatment and they each received income support like unemployment insurance. The control group numbered 154 and received no income support from the Department of Labor. By the end of the year, 48.3% of the treatment group and 49.4% of the control group were rearrested. Did income support reduce recidivism? Complete the appropriate statistical test and briefly explain your conclusion. (10 points)



Null hypothesis: no difference, income support didn't make a difference.

$$SE \text{ for } T = \frac{Box\ SD \times \sqrt{592}}{592} \times 100\% \approx \frac{\sqrt{(.483)(.517)} \times \sqrt{592}}{592} \times 100\%$$

$$\approx 2.05\%$$

$$SE \text{ for } C = \frac{Box\ SD \times \sqrt{154}}{154} \times 100\% \approx \frac{\sqrt{(.494)(.506)} \times \sqrt{154}}{154} \times 100\%$$

$$\approx 4.02\%$$

$$SE \text{ for difference} = \sqrt{(2.05)^2 + (4.02)^2} = 4.51\%$$

$$\frac{48.3 - 49.4}{4.51} = -.24$$



$$A(-.24) \approx 19\% \quad p\text{-value} \approx 40.5\%$$

Accept the null, the difference could be just chance variation. Income support is of little help.