Handout 8: Confidence interval for proportion supporting gay marriage

```
table(politics$gaymarriage)
```

```
##
## No legal recognition         Civil unions Support gay marriage
##                  773                  992                 2473
```

```
#sum up to get n
773+992+2473
```

```
## [1] 4238
```

```
#estimate p-hat
round(2473/4238,2)
```

```
## [1] 0.58
```

```
#t-stat
qt(0.975, 4238-1)
```

```
## [1] 1.960524
```

$$\texttt{standard error} = \sqrt{\hat{p} * (1 - \hat{p})/n} =$$ sqrt(0.58*(1-0.58)/4238)=
sqrt(0.2436/4238)=
sqrt(.00005748)=.0076

$$\texttt{confidence interval} = \hat{p} \pm t * (\texttt{standard error}) =$$ 0.58+1.960524*.0076=.5949
0.58-1.960524*.0076=.5651

56.5% - 59.5%

Name (Print and Sign): _____