Homework 8.3

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Exercise 9.20 (a) H0: p1=9/16,p2=3/16,p3=3/16,p4=1/16
H1: at least mone proportion is different from the stated version.
(b)

```
chi=1.269
df=3
p=.6895
p
```

```
## [1] 0.6895
```

```
chi
```

```
## [1] 1.269
```

We fail to reject the null hypothesis at the .05 level.
Exercise 9.22 (a)

```
N=678+227+56+28+8+14
observed=c(678,227,56,28,8,14)
expected=c(676.9,224.9,63.1,16.4,3.7,1.1)
chi=(observed-expected)^2/expected
chi=21.021
p=.001
chi
```

```
## [1] 21.021
```

```
p
```

```
## [1] 0.001
```

Since p is low we reject the null hypothesis. (b)

```
expected=c(676.9,224.9,85.9,32.8,12.3)
chi=(observed-expected)^2/expected
```

```
## Warning in observed - expected: longer object length is not a multiple of
## shorter object length
```

```
## Warning in (observed - expected)^2/expected: longer object length is not a
## multiple of shorter object length
```

```
chi=17.239
p=.002
chi
```

```
## [1] 17.239
```

```
p
```

```
## [1] 0.002
```

Since p is low we reject the null hypothesis. Exercise 9.28 (a) Chi squared of rindependence since we want to find out if they are independent.
(b) H0: Returned are dpendent on citites. H1: returned depend on type of city. (c)

```
chi=4.41
df=3
```

Do not reject null hypothesis.
Exercise 9.30 (a)

```
sick=c(31,60)
notsick=c(77,48)
treatment=c(31,60)
placebo=c(60,48)
```

  (b) H0:We nare testing being sick is independent of treatment. H1: Being sick is not dependent on receiving treatment
  (c)

```
chi=15.9698
df=1
```

Since p is low we reject H0 and conclude dramimine is an effective drug.