Homework 5.3

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Exercise 6.17 (a) $H_0 P = .54$
$H_1 P \neq .54$
(b)

$H_0 P \geq .05$
$H_1 P < .05$
(c)

$H_0 P \geq .40$
$H_1 P < .40$
(d)

$H_0 P_{gatorade} \leq P_{Allsports}$
$H_1 P_{gatorade} > P_{allsports}$
Exercise 6.19 a) The null hypothesis should be - The chemical compound used as a food additive is a suspected carcinogen and is not consumed in the safe amount. Not detecting a cancer cause is a serious threat.

(b) The null hypothesis should be - The new drug is not bioequivalent to the original drug, because that is a critical factor for drug approval by the FDA. If it is incorrectly concluded that the drug is bioequivalent, then a potentially hazardous drug may come out in the market for general use.

(c) It is not biologicallyt equivalent should be set up as the null hypothesis as people could get sick otherwise.

(d) It is effective should be set up as the null hypothesis because believing it is effective is important for preventing drought.
Exercise 6.20 (a) 50% 50%

(e) .25% .75%
Exercise 6.27 (a) H0 =10
H1< 10

(f)

```
z<-(8.7-10)/(2/sqrt(15))
pnorm(z,0,1)
```

```
## [1] 0.005910569
```

reject null hypothesis is there is enough evidenc eto support the claim at .05;
(C)

```
.1039
```

```
## [1] 0.1039
```

```
1-.1039
```

```
## [1] 0.8961
```

Exercise 6.30 (a)

```
1-.95^20
```

```
## [1] 0.6415141
```

(b) Whenever there is multiple testing to be done there is increased probability of a type I error.