Homework 6.1

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Exercise 7.8 (a) Test whether PH value of a certain chemical is to be controlled at 5 H0: The mean ph as no changed from the target value of 5 H1: The mean Ph as changed from the target value of 5
(b)

```
ME=1
sigma=1
(2.576^2+sigma^2)/ME^2
```

```
## [1] 7.635776
```

(c)

```
z=(4.915-5)/(.2/sqrt(16))
pnorm(z,mean=0,sd=1)
```

```
## [1] 0.04456546
```

Here p value is less than .1 so we reject H_0.
Exercise 7.10 (a) H_0 The speedometers have no bias. H_1 The Speedometers have bias.
(b)

```
(2.326+1.645)^2*1^2/(55.5-55)^(2)
```

```
## [1] 63.07536
```

(c)

```
Z=(55.2-55)/(.8/sqrt(64))
Z
```

```
## [1] 2
```

```
pnorm(Z,0,1)
```

```
## [1] 0.9772499
```

Since 2 is less than 2.326 we fail to reject H_0. We can not conclude that the speedmeter have a bias.
(d)

```
Z=2.326-(55.5-55)/(.8/sqrt(50))
1-pnorm(Z,0,1)
```

```
## [1] 0.981844
```