Prob and Stat Hmwk ch6

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Pg. 407: 4,12,14

4)

a) H0: p <= 2.5 H1: p>2.5 Z = mean-mu_not/(sd/sqrt(n))

```
(2.6-2.5)/(0.3/sqrt(50))
```

```
## [1] 2.357023
```

p-value = 0.0091

b) 100- (p-value*100) = 99.09%

12) p-value * 100 = 4

13)

a) Two tailed

b) H0: mu =73.5

c) 0.196

d) z=-1.80 p-value = 0.0602

e)

```
alpha = .99
qnorm(abs(1-alpha/2),lower.tail = FALSE)
```

```
## [1] -0.01253347
```

Pg. 415: 2,4,12

2) True or False:

a) If we reject H0, then we conclude that H0 is false. False
b) if we do not reject H0, then we conclude that H0 is true. False
c) if we reject H0, then we conclude that H1 is true. True
d) I we do not reject H0, then we conclude that H1 is false. True

4) If P=0.50, which is the best conclusion? III: There is a a 50% probability that H0 is true

5) A machine that fills cerceal boxes is supposed to be calibrated so that the mean fill weight is 12oz. Let u denote the true mean fill weight. Assume that in a test of of the hypotheses H0: u=12 versus H1: u =| 12, the P-value is 0.30.

a. Should H0 be rejected on the basis of this test? Explain Yes because its P high and its using a 2 tailed test so the true mean is quite far the Null.

b. Can you conclude that the machine is calibrated to provide a mean fill weight of 12oz? Explain. No, but you could say its close because the p-value is 0.30 which is means the fill weight is probability just above 12oz

Pg. 420: 2,12

2) Of 444 samples, 281 male and 163 female. Can you conclude that more than 60% of HIV+ smokers are male? H0: p<=0.6 vs H1: p>0.6 P_hat=281/444 = 0.6328829 Sqrt((0.6)(1-0.6)/444) = 0.02324953 z=(0.6328829-.6)/0.02324953=1.414347 P-value=0.0793 With 92% confidence, yes.

3) a) two tailed because the null is just equal to

b) H0: p = 0.4

c) no, because the p-value is lower

d)

e)

f)

Pg. 425: 1,4,7,8

4)

a) H0: p = .23 H1: p=|.23

b)

```
(.232-.23)/(0.2/sqrt(9))
```

```
## [1] 0.03
```

0.01 < p < 0.02

c) Probly not, the p-value is less than 0.05, therefore H0 is rejected.

8)

a) H0: p <= 85 H1: p>85

b)

```
(90.55-85)/(2.901551/sqrt(5))
```

```
## [1] 4.277084
```

0.001 < p < 0.005

c) Yes, it should be accepted