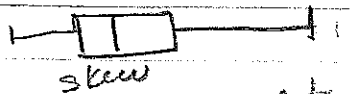
pg 754-55 #5, 8 pg 761-762 #13(a-c), 18

(5) $n = 38$

$H_0: \mu = 1200$ mg $\quad \alpha = .05$

$H_a: \mu < 1200$ mg (claim)



$n = 38 \Rightarrow$ use t BC skew

independence ✓

10% rule $38 \times 10 = 380$ women > 380 ✓

central limit Thm will normalize ✓

$\bar{x} = 926.03$

$s_x = 427.23$

$\sigma = 421.57$

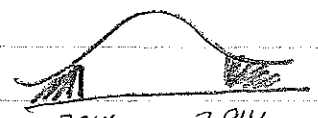
BC t*

$$t = \frac{926.03 - 1200}{427.23/\sqrt{38}} = -3.95$$

t is in Rejection Region using t test we can Reject H_0 of $\mu = 1200$mg at $\alpha = .05$ and have evidence to support claim that the average calcium intake is lower than 1200mg.

(8) $H_0: \mu = 0$ $\quad \bar{x}_d = 328$ $\quad n = 16$

$H_a: \mu \neq 0$ claim $\quad s_d = 256$ $\quad df = 15$



$$t = \frac{328 - 0}{256/\sqrt{16}} = 5.125$$

reject H_0 that there is no change in the calorie Burn and have suff. evid to support the claim that there is a change in MEAT that is statistically significant at $\alpha = .01$

used t-test

use t → paired

(13)(a) $n=200$ $\alpha=.01$ one sample μ_d

$\mu_d = 0$

$\mu_d > 0$

$t = \frac{332-0}{108/\sqrt{200}} = 43.47 \Rightarrow$ P value $= 0$

$0 < .01 =$ Reject H_0

Since P-value is less than .01 we can reject the null and conclud that the mean amount charged increases under the no fee offer.

(b) $t^* = 2.6008$ $ME = 2.6008\left(\frac{108}{\sqrt{200}}\right)$ 99% $\Rightarrow .01 \div 2 = .005$

$ME = 19.86$

(312.14, 351.86), The true mead diff. in credit card charges at 99% level of conf will be Between $312.14 and $351.86

(c) The sample size is very large and it is a SRS, outliers are only potential snag but are a non issue Bic of the CC Limit.

(18) 10 plots $\mu_d = .34$ $s_d = .83$ V-A - VB Variety A Bigger

(a) The parameter of interest is the mean difference μ_d in the yields for the two varieties of plants.

(b) $H_0: \mu_d = 0$ use $\alpha = .05$ $t = \frac{.34}{.83/\sqrt{10}} = 1.295 \Rightarrow$ FTR H_0 non sucess

$H_a = \mu_d > 0$

↓ right tailed

$t_\alpha = 1.83$

The observed variation likely due to chance

since the test statistic is less than t^* and Falls in the Fail to reject Region; there is insufficient evidence to reject the null, Thus we can not conclude the mean diff is diff from zero