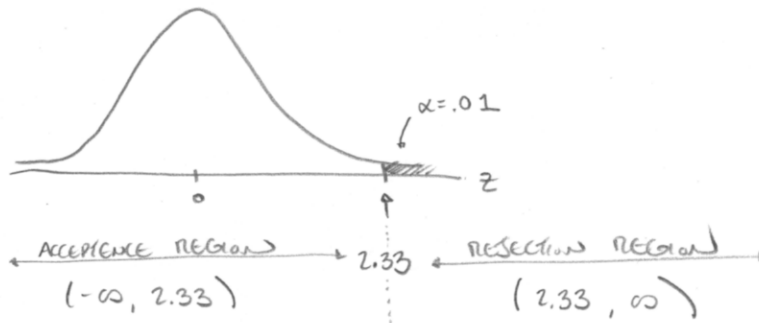
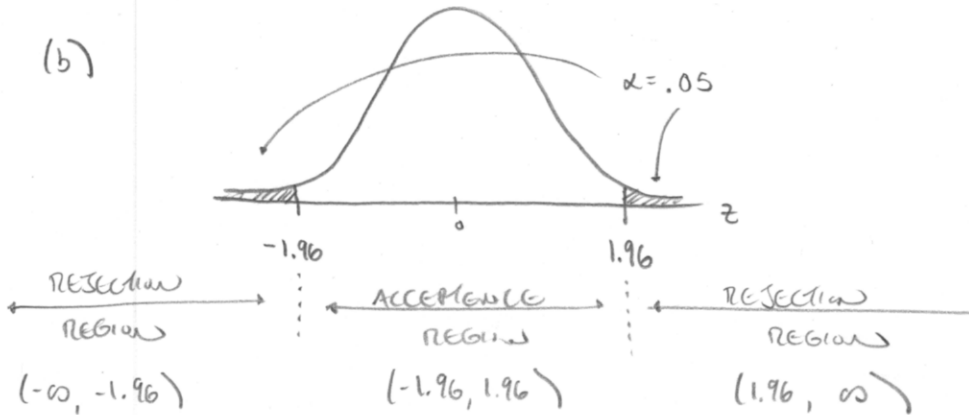


1.

(a)



(b)



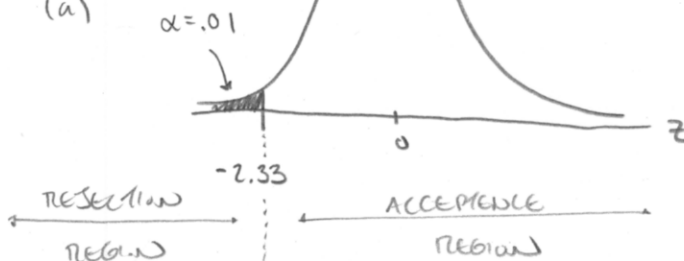
2.

(a) CANNOT REJECT H_0 .

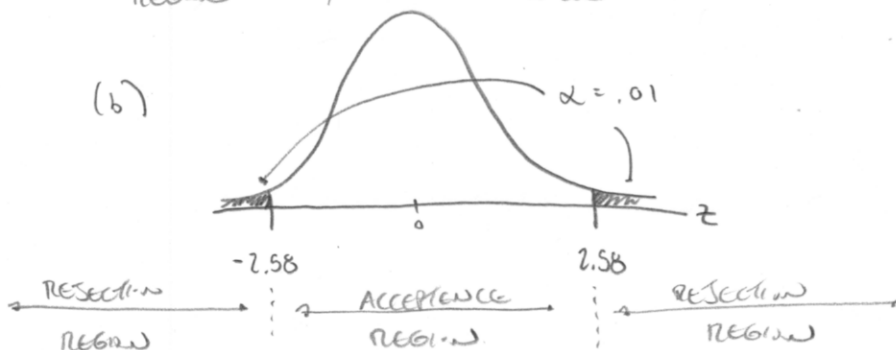
(b) REJECT H_0 WITH 95% CONFIDENCE, CONCLUDE μ IS LOWER THAN STATED IN H_0 .

3.

(a)



(b)



(c) FOR PART (a):

REJECT H_0 WITH 99% CONFIDENCE, CONCLUDE μ IS LOWER THAN STATED IN H_0 .

FOR PART (b)

CANNOT REJECT H_0 .

4. (a) $P(Z > 1.15) = .1251$

(b) $P(Z < -2.78) + P(Z > 2.78) = .0054$

(c) $P(Z < -1.81) = .0351$

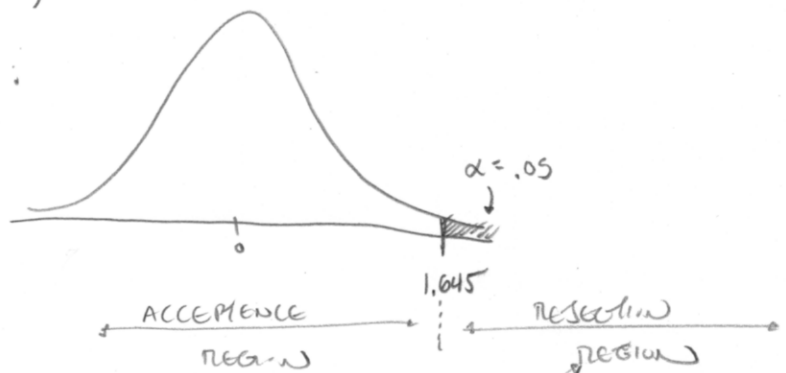
5. (a) THIS P-VALUE IS TOO LARGE TO BE STATISTICALLY SIGNIFICANT AT ANY REASONABLE LEVEL OF CONFIDENCE

(b) THIS P-VALUE IS VERY SMALL, AND SO THE RESULT IS STATISTICALLY SIGNIFICANT AT $\alpha = .0054$ AND ABOVE (INCLUDING $\alpha = .05 \leftrightarrow$ "STATISTICALLY SIGNIFICANT",

(c) THIS P-VALUE IS SMALL AND SO THE RESULT IS STATISTICALLY SIGNIFICANT AT THE $\alpha = .0351$ LEVEL AND ABOVE, (INCLUDING $\alpha = .05$, BUT NOT $\alpha = .01$).

6. (a) $H_0: \mu = 2.3$, $H_a: \mu > 2.3$

(b) FOR TEST STATISTIC Z :



(c) $S.E. = \frac{S}{\sqrt{n}} \approx \frac{S}{\sqrt{n}} = \frac{.29}{\sqrt{35}} \approx .0490$

(d) $Z = \frac{\bar{x} - \mu}{S.E.} = \frac{2.4 - 2.3}{.0490} \approx 2.0408$

Yes, THE DATA INDICATES $\mu > 2.3$.

7. (a) $P(z > 2.04) = .0207$
- (b) REJECT H_0 , ACCEPT H_a , SINCE $p\text{-VALUE} < .05$
- (c) YES, SAME.

9. $H_0: \mu = 20$ $H_a: \mu \neq 20$

$$z = \frac{\bar{x} - \mu}{S.E.} = \frac{26.8 - 20}{6.5/\sqrt{100}} \approx -1.8462$$

$$p\text{-VALUE} = P(z < -1.8462) + P(z > 1.8462) = .0649$$

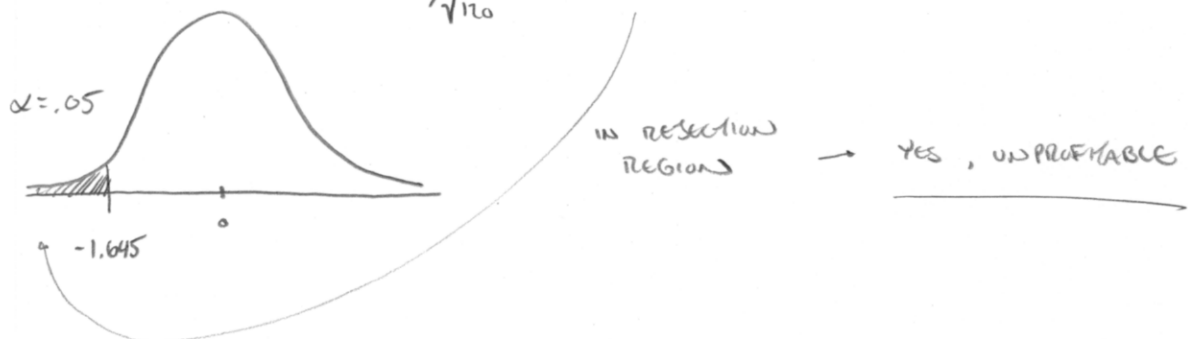
CANNOT REJECT H_0 SINCE $p\text{-VALUE} > .05$

(i.e. RESULTS NOT STATISTICALLY SIGNIFICANT)

10. (a) $H_0: \mu = .60$ $H_a: \mu < .60$

(b) ONE SIDED. IF $\mu > .60$ THE AIRLINE DOES NOT NEED TO TAKE ANY ACTION.

$$(c) z = \frac{\bar{x} - \mu}{S.E.} = \frac{.58 - .60}{.11/\sqrt{120}} \approx -1.9917$$



11. (a) $H_0: \mu = 1$ $H_a: \mu \neq 1$

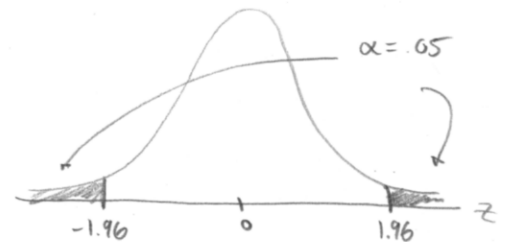
(b) $z = \frac{\bar{x} - \mu}{S.E.} = \frac{1.01 - 1}{.18/\sqrt{35}} \approx .3287$

p-value = $P(z < -.3287) + P(z > .3287) = .7424$

(c) UNABLE TO FIND STATISTICALLY SIGNIFICANT DATA
THAT $\mu \neq 1$.

12. (a) $H_0: \mu = 5$ $H_a: \mu \neq 5$

$z = \frac{11.17 - 5}{3.9/\sqrt{50}} \approx 11.1068$



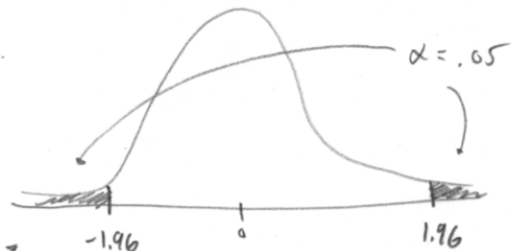
SOOOO FAR INTO REJECTION REGION!

Yes.

(b) p-value = $P(z < -11.19) + P(z > 11.19) \approx 0$, Yes

13. (a) $H_0: \mu = .80$ (b) $H_a: \mu \neq .80$

(c) $z = \frac{.797 - .8}{.008/\sqrt{100}} = -3.75$

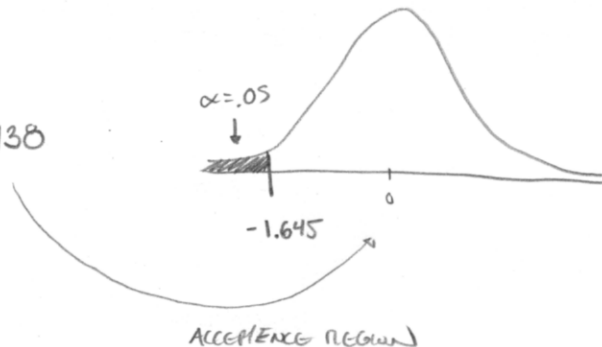


REJECTION REGION.

CONCLUSION: $\mu \neq .80$

14.

$$z = \frac{6.7 - 7}{2.7/\sqrt{80}} \approx -1.9938$$



DATA DOES NOT PROVIDE SUFFICIENT EVIDENCE THAT $\mu < 7$.

15.

$$z = \frac{7.9 - 7.4}{1.9/\sqrt{100}} \approx 2.6316$$

$$P\text{-VALUE} = P(Z < -2.63) + P(Z > 2.63) = .0085$$

WE CAN REJECT H_0 AT $\alpha = .0085$ LEVEL AND ABOVE.

(b) COLLEGE GRADS HAVE SHORTER WORK DAYS (BETTER QUALITY OF LIFE?)

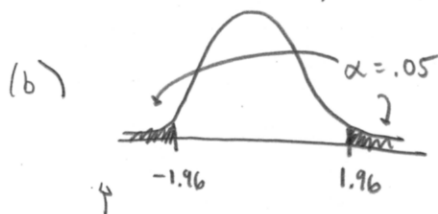
(c) COLLEGE GRADS WORK LESS (LAZY?)

16.

$$(a) z = \frac{98.25 - 98.6}{.73/\sqrt{130}} \approx -5.4666$$

$$P\text{-VALUE} = P(Z < -5.4666) + P(Z > 5.4666) \approx 0 < \alpha = .05$$

CONCLUDE $\mu \neq 98.6$

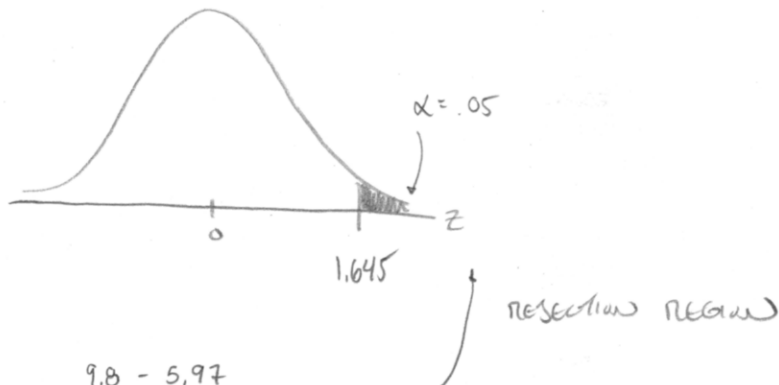


-5.4666 IS IN REJECTION REGION $\rightarrow$ CONCLUDE $\mu \neq 98.6$

(c) SAME.

(d) MAYBE HIS THERMOMETER WAS NOT CORRECT?

17.



$$z = \frac{9.8 - 5.97}{1.95 / \sqrt{31}} \approx 10.9357$$

Yes,