Identify the test (circle one):

1. Significance test for one proportion (1-PropZTest)
2. Significance test for the difference of two proportions (2-PropZTest)
3. Significance test for a mean (T-Test)
4. Significance test for the difference of two means (2-SampTTest)

Data: Significance level $\alpha =$ 5%

Other: (depending on the test, circle and give the necessary values)

$p_0 =$ ____ $\hat{p} =$ ____ $\overline{x} =$ 43.3 mpg

$\mu_0 =$ 42 m.p.g $\hat{p}_1 =$ ____ $\overline{x}_1 =$ ____

$n =$ 40 $\hat{p}_2 =$ ____ $\overline{x}_2 =$ ____

$n_1 =$ ____ $x_1 =$ ____ $s =$ 5.06 mpg

$n_2 =$ ____ $x_2 =$ ____ $s_1 =$ ____

$x =$ ____ $s_2 =$ ____

Check the conditions:

1. The sample was not obtained at random so the conclusion may not be true.
2. n = 40 is big enough (15-40 rule)
3. 10n = 400 < total number of 07 Honda ~~Civ~~ Civic owners

State the hypotheses:

H_0: $\mu = \mu_0$

H_a: $\mu > \mu_0$

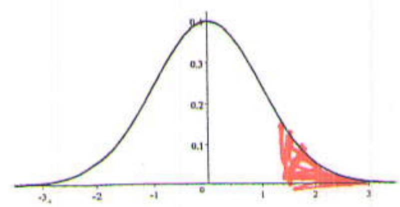
where (circle and describe in words the appropriate symbol(s): $p, p_1, p_2, \mu, \mu_1, \mu_2$)

μ = true mean miles per gallon that would be reported among all 07 Civic owners

Compute the test statistic, p-value, and label and complete the sketch:

Test statistic: $\boxed{t = \dfrac{\bar{x} - \mu_0}{s/\sqrt{n}}}$ = 1.6249

formula



P-value = .0561

Is the sample significant? No

Yes/No

Conclusions:

(Circle one) We reject/don't reject the null hypothesis.

Explain in context.

Because P-Value = .0561 > .05 = α, we do not reject the null hypothesis. If indeed the true mean miles per gallon for 07 civic owners was 42 mpg, then it would be likely (.0561 probability) to get a sample as extreme or more than $\bar{x} = 43.3$ and $s = 5.06$

Moreover as we said in condition 1, the sample was not representative, so in reality $\overline{x}$ from a random sample maybe even smaller.

Identify the test (circle one):

1. Significance test for one proportion (1-PropZTest)
2. Significance test for the difference of two proportions (2-PropZTest)
3. Significance test for a mean (T-Test)
4. Significance test for the difference of two means (2-SampTTest)

Data: Significance level $\alpha =$ 5%

Other: (depending on the test, circle and give the necessary values)

$p_0 =$ ______ $\hat{p} =$ ______ $\overline{x} =$ 111.12

$\mu_0 =$ 110 $\hat{p}_1 =$ ______ $\overline{x}_1 =$ ______

$n =$ 25 $\hat{p}_2 =$ ______ $\overline{x}_2 =$ ______

$n_1 =$ ______ $x_1 =$ ______ $s =$ 6.9899

$n_2 =$ ______ $x_2 =$ ______ $s_1 =$ ______

$x =$ ______ $s_2 =$ ______

Check the conditions:

1. The sample was not obtained at random, but it can be considered as one that was.
2. n=25 is in between 15 and 40
3. 10n = 250 < total of all possible measurements of blood glucose (infinite)

State the hypotheses:

H_0: $\mu = \mu_0$

H_a: $\mu > \mu_0$

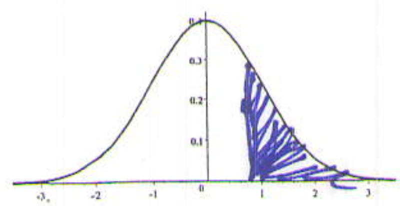
where (circle and describe in words the appropriate symbol(s): $p, p_1, p_2, \mu, \mu_1, \mu_2$)

μ = true average glucose level of this person

Compute the test statistic, p-value, and label and complete the sketch:

Test statistic: $\boxed{t = \frac{\overline{x} - \mu_0}{s/\sqrt{n}}}$ = .801145

formula



P-value = .2154

Is the sample significant? No

Yes/No

Conclusions:

(Circle one) We reject/don't reject the null hypothesis.

Explain in context.

Because P-Value = .2154 ≥ .05 = α we do not reject Ho.

If indeed the average blood glucose was 110 mg/dL, then it would be quite likely to get a sample as extreme or more than

$\overline{x}$ = 111.12 and s = 6.9899.

95 % confidence interval for the difference

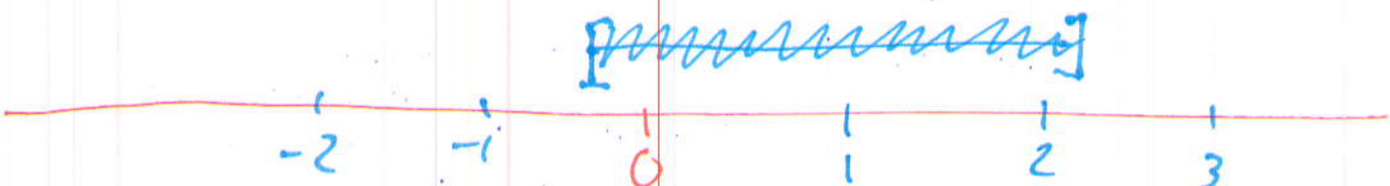
$\mu_1 - \mu_2$, where

μ_1 = true mean amount of aldrin at the bottom of the Wolf river

μ_2 = true mean amount of aldrin at mid-depth

$$(\bar{x}_1 - \bar{x}_2) \pm \underset{??}{t^*} \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$$

$(-.3009 , 2.2809)$



Note: Always use T-test or t-samp interval for mean problems

95% confidence interval for $\mu_1 - \mu_2$

μ_1 = mean walking time of babies using special exercises

μ_2 = mean walking times of babies in the control group.

$(-3.44, .93997)$