

Homework 04

ming Lin

I pledge my honor that
I have abided by Stevens
honor code

6.58 - Computing the P-value

a) $P\text{-value} = \underline{.038}$, $\mu = \mu_0$

b) $P\text{-value} = \underline{.962}$, $\mu < \mu_0$

c) $P\text{-value} = \underline{.0762}$, $\mu \neq \mu_0$

6.59 - more on computing the P-value

a) $P\text{-value} = \underline{.955}$, $\mu > \mu_0$

b) $P\text{-value} = \underline{.0455}$, $\mu < \mu_0$

c) $P\text{-value} = \underline{.091}$, $\mu \neq \mu_0$

6.71 - attitude toward school

$$a) \quad z = \frac{127.8 - 115}{\frac{30}{\sqrt{25}}} = \frac{12.8}{6} = 2.13$$

$$P = \underline{.017}$$

- because $P < \alpha$ older students
do not have better attitude

b) The two assumptions
are the normal dist.
and SRS sample. The
SRS sample is more
important because
there are no outliers
to show the Normal
distribution

6.73 - Are the measurements similar?

a) To test this suspicion...

$$H_0: \mu = 0$$

$$H_a: \mu \neq 0$$

$$b) z = \frac{2.73}{\frac{3}{\sqrt{20}}} = \underline{4.064}$$

because $P < \alpha$ H_0 is rejected

6.99 - practical significance and sample size

$$a) z = \frac{2453.7 - 2403.7}{88} = .57, P = .284$$

$$b) z = \frac{2453.7 - 2403.7}{\frac{880}{\sqrt{500}}} = 1.27, P = .102$$

$$c) z = \frac{2453.7 - 2403.7}{\frac{880}{\sqrt{2500}}} = 2.84, P = .002$$

6.12 - Choose the appropriate distribution

a) $P = .1 + .1 + .2 = \underline{.4}$
↑ prob of type I error

b) $P = .1 + .1 + .1 + .1 = \underline{.4}$
↑ prob of type II error

7.22 - A one-sample t test

a) 15

b) 2.249, 2.131

c) $.02 < P < .025$

d) at 5% level t is not significant

at 10% level t is significant

e) $P = .0241$

7.23 - Another one-sample t test

a) 26

b) 1.706, 2.056

c) $.05 < P < .1$

d) at 5% level and 10% level t is not significant

e) $P = .055$