

Quiz 6

1. Suppose I claim that more than 25% of patients in a hospital are suffering from a chronic illness. What null and alternate hypotheses would I use if I wanted to test my claim?

1 pt

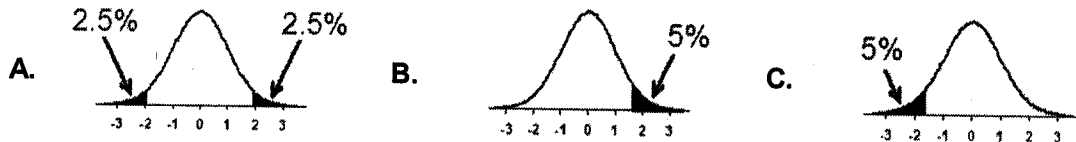
- a) $H_0: \pi \leq 0.25$ $H_a: \pi > 0.25$
- b) $H_0: \pi < 0.25$ $H_a: \pi \geq 0.25$
- c) $H_0: \mu \geq 0.25$ $H_a: \mu < 0.25$
- d) $H_0: \mu > 0.25$ $H_a: \mu \leq 0.25$
- e) $H_0: p \leq 0.25$ $H_a: p > 0.25$
- f) $H_0: p < 0.25$ $H_a: p \geq 0.25$

2. Suppose I claim that the average age of all patients in that hospital that is NOT 50 years. What null and alternate hypotheses would I use if I wanted to test my claim?

1 pt

- a) $H_0: \pi = 50$ $H_a: \pi \neq 50$
- b) $H_0: \pi \neq 50$ $H_a: \pi = 50$
- c) $H_0: \mu = 50$ $H_a: \mu \neq 50$
- d) $H_0: \mu \neq 50$ $H_a: \mu = 50$
- e) $H_0: \bar{X} = 50$ $H_a: \bar{X} \neq 50$
- f) $H_0: p = 50$ $H_a: p \neq 50$

3. Match the following hypotheses to the correct $\alpha=0.05$ rejection region: either A, B, or C.



5 pts

<u>B</u>	$H_0: \pi \leq 0.80$	$H_a: \pi > 0.80$
<u>A</u>	$H_0: \pi = 0.50$	$H_a: \pi \neq 0.50$
<u>C</u>	$H_0: \mu \geq 0.80$	$H_a: \mu < 0.80$
<u>A</u>	$H_0: \mu = 100$	$H_a: \mu \neq 100$
<u>B</u>	$H_0: \mu \leq 100$	$H_a: \mu > 100$

4. Suppose I am testing $H_a: \pi > 0.50$ $H_0: \pi \leq 0.50$. TS $z=4.91$.

1/2 pt What is the rejection region?

$TS > 1.645$

1 pt If you are testing at the $\alpha = 0.05$ level, will you reject H_0 or will you fail to reject H_0 ? Reject H_0

5. Suppose I am testing $H_0: \mu = 5.0$, TS $t_7 = -0.31$.
 $H_a: \mu \neq 5.0$

1/2 pt What is the rejection region?

$|TS| > 2.365$

If you are testing at the $\alpha = 0.05$ level, will you reject H_0 or will you fail to reject H_0 ?

1 pt fail to reject H_0