Practice 12

8.4 Z-Test for Proportion

1) The following display from a TI-84 Plus calculator presents the results of a hypothesis   1) _____
test for a population proportion p. State the null and alternate hypotheses.

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1-PropZTest
prop > 0.29
z = -1.60
p = 0.054799
^
p = 0.205
n = 73
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A) $H_0: p = 0.29, H_1: p > 0.29$ B) $H_0: p = 0.205, H_1: p > 0.205$
C) $H_0: p = 0.054799, H_1: p > 0.054799$ D) $H_0: p = 0.205, H_1: p = 0.29$

2) It has been found that 50.8% of U.S. households own stocks and mutual funds. A   2) _____
random sample of 350 heads of households indicated that 198 owned some type of
stock or mutual fund. State the null and alternate hypotheses for testing if there is a
significant difference.

A) $H_0: p = 0.565$ B) $H_0: p = 0.508$
   $H_1: p > 0.565$ $H_1: p \neq 0.508$
C) $H_0: p = 0.508$ D) $H_0: p = 0.508$
   $H_1: p \neq 0.565$ $H_1: p > 0.508$

3) A magazine article reported that 14% of adults buy takeout food every day. A fast-food   3) _____
restaurant owner surveyed 210 customers and found that 32 said that they purchased
takeout food every day. State the null and alternate hypotheses for testing the article's
claim.

A) $H_0: p = 0.14$ B) $H_0: p \neq 0.14$ C) $H_0: p = 0.14$ D) $H_0: p = 0.14$
   $H_1: p > 0.14$ $H_1: p = 0.14$ $H_1: p < 0.14$ $H_1: p \neq 0.14$

4) In a simple random sample of size 94, there were 61 individuals in the category of   4) _____
interest. It is desired to test $H_0: p = 0.59$ versus $H_1: p < 0.59$. Compute the test statistic
z.

A) 0.05   B) 0.65   C) 4.79   D) 1.16

5) In a simple random sample of size 96, there were 72 individuals in the category of   5) _____
   interest. It is desired to test $H_0: p = 0.80$ versus $H_1: p < 0.80$. Do you reject H_0 at the
   0.05 level?

   A) No   B) Yes

6) In a simple random sample of size 62, there were 22 individuals in the category of   6) _____
   interest. It is desired to test $H_0: p = 0.36$ versus $H_1: p \neq 0.36$. Compute the test statistic
   z.

   A) -0.06   B) -0.09   C) -0.73   D) -0.12

7) In a survey of 426 cigarette smokers, 51 of them reported that they have tried hypnosis   7) _____
   therapy to try to quit smoking. Can you conclude that more than one-tenth of smokers
   have tried hypnosis therapy? Use the $\alpha = 0.05$ level of significance.

   A) No
   B) No conclusion is possible.
   C) Yes

8) It has been claimed that at UCLA at least 40% of the students live on campus. In a   8) _____
   random sample of 250 students, 90 were found to live on campus. Find the test value at
   $\alpha = 0.01$?

   A) -1.65   B) -1.98   C) -1.29   D) -2.33

9) About 29% of all burglaries are through an open or unlocked door or window. A   9) _____
   sample of 130 burglaries indicated that 87 were not via an open or unlocked door or
   window. At the 0.05 level of significance, can it be concluded that this differs from the
   stated proportion?

   A) Yes. There is enough evidence to support the claim that the proportion of open or
      unlocked window or door burglaries differs from 29%.
   B) No. There is not enough evidence to support the claim that the proportion of open
      or unlocked window or door burglaries differs from 29%.
   C) There is not enough information to draw a conclusion.

10) A survey by *Men's Health* magazine stated that 15% of all men said that they used   10) _____
    exercise to relieve stress. A random sample of 100 men was selected, and 12 said that
    they used exercise to relieve stress. Use the *P*-value method to test the claim. Use α
    =0.10.

    A) Yes. There is not enough evidence to reject the claim that the percentage of men
       who use exercise to relieve stress is 15%.
    B) There is not enough information to draw a conclusion.
    C) No. There is enough evidence to reject the claim that the percentage of men who
       use exercise to relieve stress is 15%.

1) A
2) B
3) D
4) D
5) A
6) B
7) A
8) C
9) B
10) A