5.2 review

Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the z* values based on a standard normal distribution for each of the following.

1) An 88% confidence interval for a correlation.   1) _____
    A) (-1.185, 1.185)   B) (-1.96, 1.96)   C) (-1.645, 1.645)   D) (-1.555, 1.555)

2) A 94% confidence interval for a difference in proportions.   2) _____
    A) (-1.59, 1.59)   B) (-1.185, 1.185)   C) (-1.88, 1.88)   D) (-1.96, 1.96)

3) An 99% confidence interval for a correlation.   3) _____
    A) (-2.575, 2.575)   B) (-1.96, 1.96)   C) (-1.185, 1.185)   D) (-1.645, 1.645)

4) Find the indicated confidence interval. Assume the standard error comes from a bootstrap   4) _____
    distribution that is approximately normally distributed.
    A 95% confidence interval for a mean μ if the sample has n=60 with $\bar{x}$=62 and s=12, and the
    standard error is SE=1.55.
    Round your answers to three decimal places.
    A) (42.26, 81.74)   B) (38.48, 85.52)   C) (59.450, 65.550)   D) (58.962, 65.038)

The survey also asked participants for their level of education, and we wish to estimate the difference in the proportion to use online dating between those with a college degree and those with a high school degree or less. The results are shown in the two-way table below.

	College	High School	Total
Yes	157	70	227
No	666	565	1231
Total	823	635	1458

5) State the null and alternative hypotheses.   5) _____
    Let group 1 be the proportion of college graduates using online dating and group 2 be the
    proportion of high school graduates using online dating,
    A) $H_0: p1 = p2$ B) $H_0: p1 < p2$ C) $H_0: p1 = p2$ D) $H_0: p1 = p2$
       $H_a: p1 > p2$ $H_a: p1 = p2$ $H_a: p1 \neq p2$ $H_a: p1 < p2$

6) What is the sample statistic?   6) _____
    A) $\hat{p}_1 - \hat{p}_2 = 0.081$ B) $\hat{p}_1 - \hat{p}_2 = -0.081$
    C) $\hat{p}_1 - \hat{p}_2 = 0.384$ D) $\hat{p}_1 - \hat{p}_2 = -0.384$

7) For 95% confidence Level, find the z* values   7) _____
    A) (-1.96, 1.96)   B) (-1.645, 1.645)   C) (-2.33, 2.33)   D) (-2.575, 2.575)

8) Use the fact that the standard error for the estimate is 0.019 to find a 95% confidence interval for the   8) _____
    population difference in proportions. Round your answers to three decimal places.
    A) (0.347, 0.421)   B) (-0.118, -0.044)   C) (0.044, 0.118)   D) (-0.421, -0.347)

9) Is it plausible that there is no difference between college graduates and high school graduates in how likely they are to use online dating? Use the confidence interval from part above to answer.

9) _____

    A) No   B) Yes

In 2010, some researchers with the Pew Internet & American Life project interviewed a random sample of adults about their cell phone usage. One of the questions asked was whether the respondent had ever downloaded an application or "app" to their cell phone. The sample proportion who had, based on 1917 respondents who had cell phones, was $\hat{p}=0.29$. One such distribution, based on proportions from 5000 bootstrap samples, is shown in the figure below. The standard deviation of these proportions is 0.0102. Use this information to find a 90% confidence interval for the proportion of cell phone users (in 2010) who have downloaded at least one app to their phone.

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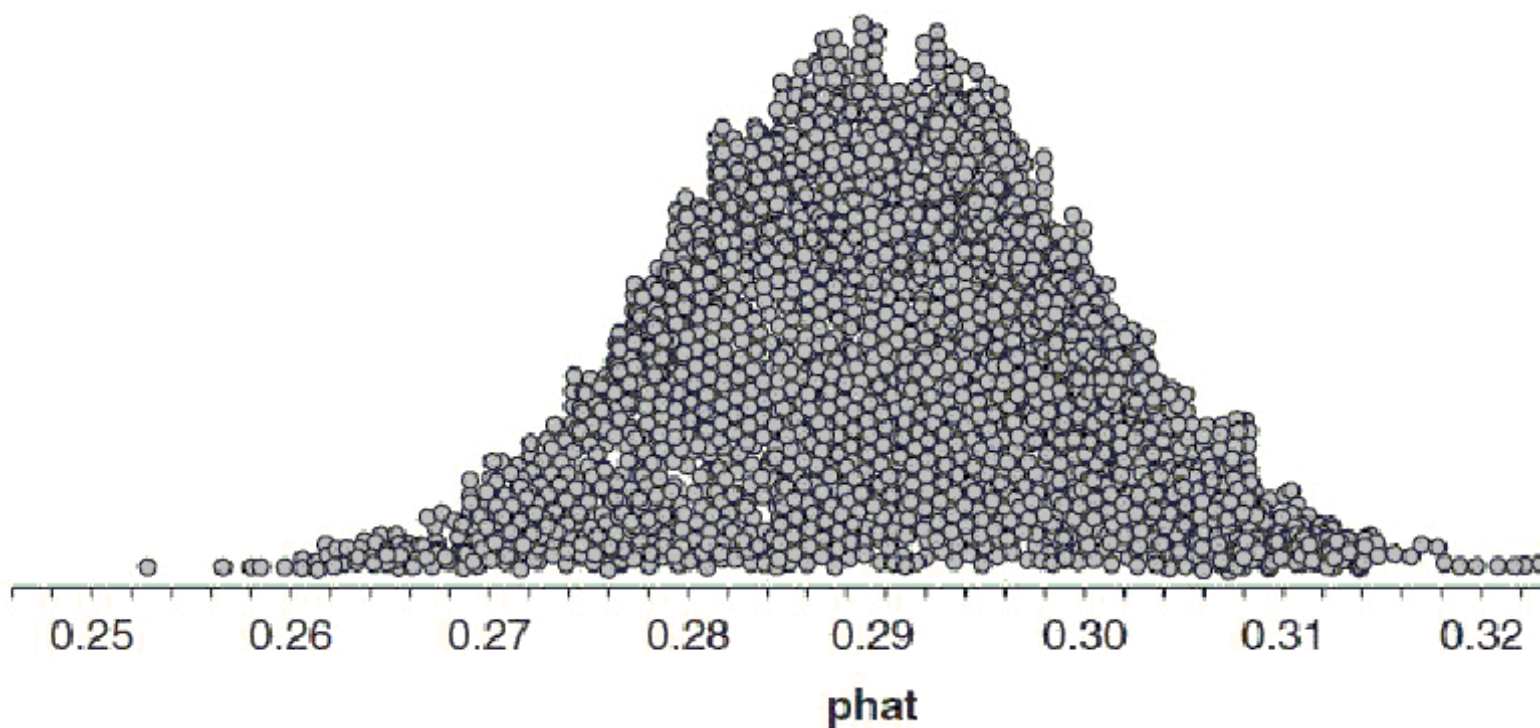
10) For 90% confidence Level, find the z* values

10) _____

    A) (−1.645, 1.645)   B) (−1.96, 1.96)   C) (−1.28, 1.28)   D) (−1.18, 1.18)

11) The 90% confidence interval is

11) _____

    A) (0.270, 0.310)   B) (0.277, 0.303)   C) (0.278, 0.302)   D) (0.273, 0.307)

12) Is the following statement an appropriate interpretation of this interval? We are 90% sure that the true the proportion of cell phone users (in 2010) who have downloaded at least one app to their phone. between *** and ***(The numbers are the answer from the question above)

12) _____

    A) Incorrect   B) Correct