



## Pre-Calculus Multiple Choice Questions - Chapter S8

1 The letter associated with a student's distribution is

- a s
- b z
- c u
- d t

	S8.2
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2 The exact shape of a t-distribution is defined by

- a Degrees of freedom
- b Sample Mean
- c Population Mean
- d Population Standard Deviation

	S8.2
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3 A t-distribution is \_\_\_\_\_ than a z-distribution

- a narrower
- b wider
- c Neither
- d None of the above

	S8.2
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- 1 In a test of  $H_0: \mu = 8$  versus  $H_a: \mu \neq 8$ , a sample of size 220 leads to a p-value of 0.034. Which of the following must be true?
- a A 95% confidence interval for  $\mu$  calculated from these data will not include  $\mu = 8$ .
  - b At the 5% level if  $H_0$  is rejected, the probability of a Type II error is 0.034
  - c The 95% confidence interval for  $\mu$  calculated from these data will be centered at  $\mu = 8$
  - d The null hypothesis should not be rejected at the 5% level
  - e The sample size is insufficient to draw a conclusion with 95% confidence
- 2 A fitness center advertises that the average pulse rate of its members is 68.4 bpm. Mr. Hamm suspects that this is a made up number and runs a hypothesis test on an SRS of 48 members, calculating a mean of 71.0 bpm and a standard deviation of 10.3 bpm. In which of the following intervals is the p-value located?
- a  $p < 0.01$
  - b  $0.01 < p < 0.02$
  - c  $0.02 < p < 0.05$
  - d  $0.05 < p < 0.10$
  - e  $p > 0.10$
- 3 A congressional representative serving on the Joint Committee on Taxation states that the average yearly charitable contributions for taxpayers is \$1250. A lobbyist for a national church organization who believes that the real figure is lower samples 12 families and comes up with a mean of \$1092 and a standard deviation of \$308. Where is the p-value?
- a Below 0.01
  - b Between 0.01 and 0.025
  - c Between 0.025 and 0.05
  - d Between 0.05 and 0.10
  - e Over 0.1

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