

CI ACTIVITY

TEXT: 8.1, 8.2

LAST NAME	FIRST NAME	DATE
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1 (5 points). During this activity, you will construct 10 (or more) 80% confidence interval estimates for the expected value of the fair six-sided die: 5 interval using normal critical values, and the other 5 using the t distribution. To construct one pair of intervals, roll 5 dice, compute the sample mean and construct intervals

$$\bar{x} \pm z_{\alpha/2} \frac{s}{\sqrt{n}} \quad \text{and} \quad \bar{x} \pm t_{\alpha/2, n-1} \frac{s}{\sqrt{n}}$$

For each interval, determine whether it contains the true population mean $\mu = 3.5$.

z-based interval	has μ ?	t-based interval	has μ ?

- (a) What percentage of your z -based intervals contained the true mean?
- (b) What percentage of your t -based intervals contained the true mean?
- (c) Follow your instructor's directions to collate all of the data obtained into one big sample. What percentage of your z -based intervals contained the true mean?
- (d) In the collated sample, what percentage of your t -based intervals contained the true mean?