Keyboarding Tip Sheet for the 2020 AP Statistics Exam

Students may complete their responses for the 2020 AP Statistics Exam either by uploading a photo of their handwritten response or by typing on a computer or other electronic device. This Keyboarding Guide provides standard ways of entering common expressions using a standard keyboard.

Tip #1: Use the characters available on your keyboard and avoid special characters.

Examples of how some common notation can be keyboarded:

- μ: `mu`
- $\bar{x}$: `x-bar`
- $\hat{p}$: `p-hat`
- σ: `sigma`
- α: `alpha`
- β: `beta`
- Q_3: `Q_3` **OR** `Q3` **OR** `Q sub 3`
- μ_x: `mu_X` **OR** `mu sub X`
- $\hat{p}_1$: `p-hat_1` **OR** `p-hat sub 1`
- H_0: `H_0` **OR** `null hypothesis`
- H_a: `H_a` **OR** `alternative hypothesis`

Examples of how some relationships and operations can be keyboarded:

- $\pm$: `+/-`
- $\leq$: `<=`
- $\geq$: `>=`
- $\neq$: `not equal`
- Binomial coefficient:
  - $\binom{8}{3}$: `C(8,3)` **OR** `8 choose 3`
- Exponent:
  - $\left(\frac{1}{2}\right)^{12}$: `(1/2)^12`
  - r^2: `r^2` **OR** `r-squared`
- Root:
  - $\frac{5}{\sqrt{30}}$: `5/sqrt(30)`

Tip #2: As always, be careful with parentheses to communicate your intended order of operations. You may need to use parentheses or brackets more frequently than when writing by hand.

The equation

$$z = \frac{2.7 - 3.2}{\frac{0.9}{\sqrt{42}}}$$

could be keyboarded as

`z = (2.7-3.2)/(0.9/sqrt(42))`

In the expression

$$(0.45)^{3-1}(0.55)$$

the position of the exponent serves to group the expression in the exponent, in this case, "3-1". When keyboarding, you must show parentheses around the expression in the exponent, such as

`(0.45)^(3-1)*(0.55)`

Tip #3: Avoid abbreviations and shorthand to ensure intended understanding.

Some examples include:

- **Do Not indicate intervals as "x-y".** The 95 percent confidence interval is 2.5-5.5 could be interpreted as the value of the difference 2.5-5.5 instead of "from 2.5 to 5.5". Say, "The 95 percent confidence interval is from 2.5 to 5.5."
- **Do Not use abbreviations that are not standard.** For example, the abbreviation "SRS" should not be used to represent "stratified random sampling" because it is widely used to represent "simple random sampling." Spell out all terms other than standard abbreviations.
- **Do Not use notation that might imply a different operation or notation than you intend.** For example, don't write binomial coefficients in a way that might look like division. $\binom{8}{3}$ should not be written 8/3. Use "C(8,3)" or "8 choose 3" instead.
- **Do Not use calculator language unless all inputs are labeled.** For example, `normalcdf(lowerbound=4.5,upperbound=5.2,mu=4.1,sigma=1.5)`.