



## Equitable Equations: *The central limit theorem*

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When using R, remember to include both code and output with your work.

### Problem 1

A certain population has mean  $\mu = 67.3$  and standard deviation  $\sigma = 14.2$ . For a sample of size  $n = 36$ ,

- (a) Determine the mean, variance, and standard deviation of the sample mean  $\bar{x}$ .
- (b) Determine the approximate probability that  $\bar{x} \leq 66.0$ .
- (c) Determine the approximate probability that  $\bar{x} \geq 67.0$ .

### Problem 2

Repeat Problem 1 using samples of size  $n = 80$ .