

# Normal Curve Area Rules of Thumb

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“A RULE OF THUMB is a principle with broad application that is ... an easily learned and easily applied procedure for *approximately calculating* or recalling some value, or for making some determination.” Modified from *Wikipedia’s* definition on line on October 22<sup>nd</sup>, 2008.



- If your problem is to find the percentage of cases falling between two values in a normal distribution using the Z-Score Area Table method(see note below), and you have one positive and one negative Z-Score value, find areas B' and B and add them together.
- If problem is to find the percentage of cases falling between two values in a normal distribution using the Z-Score Area Table method and you have two positive Z-Score values,
  - Find the area between the mean and the two Z-Score values using the B area column and subtract the smaller from the larger; or,
  - Find the area beyond (to the right, above) the two Z-Score values using the C area column and subtract the smaller from the larger.
- If problem is to find the percentage of cases falling between two values in a normal distribution using the Z-Score Area Table method and you have two negative Z-Score values,
  - Find the area between the mean and the two Z-Score values using the B' area column and subtract the smaller from the larger; or,
  - Find the area beyond (to the left, below) the two Z-Score values using the C' area column and subtract the smaller from the larger.
- If the problem is to find what percentile a value is in using its Z-Score and the Z-Score Area Table method:
  - If the Z-Score value is positive, meaning the value in question is larger than the mean, find the area from the mean to that Z-Score value in the B Column, and ADD 50 to it. Report the percentile as a whole number.
  - If the Z-Score value is negative, meaning the value in question is smaller than the mean, find the area TO THE LEFT BELOW the Z-Score value in the C' Column. This area value is the percentile. Report your percentile as a whole number.

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These rules apply to the Z Area Table as laid out and labeled contained in:

Witte, Robert S. & John S. Witte. *Statistics*, 8th Edition. New York: Harcourt, 2006/2007.