

# Re: Standard Deviation & the 68–95–99.7 rule

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  - *Date:* Fri, 21 Dec 2007 13:02:41 -0800 (PST)
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On Dec 21, 11:39 am, Maya <maya\_s...@xxxxxxxxxxxxx> wrote:

At the bottom of the intro to the Wikipedia entry on the 68–95–99.7 rule, it states:

"This rule is often used to quickly get a rough estimate of something's probability, given its standard deviation."

What an awful sentence.

What "thing's" probability could I estimate, given the thing's standard deviation? Let's say I have this data set: {6, 6, 8, 8}. It's standard deviation is 1. So, given its "1", I can estimate the probability of ..... what?

[http://en.wikipedia.org/wiki/68-95-99.7\\_rule](http://en.wikipedia.org/wiki/68-95-99.7_rule)

You also need the mean, in the case of your data set 7. So the 68–95–99.7 rule says that about 68% of observations will be within 1 of 7 (between 6 and 8), 95% within 2 of 7 (between 5 and 9) and 99.7% within 3 of 7 (between 4 and 10) IF your data set were distributed normally.

Say you have a normally distributed data set with mean 7 and standard deviation 1. Pick an element at random from your set. The probability of that element's being between 6 and 8 is 68%, the probability of its being between 5 and 9 is 95%, etc.

There is a better example at the bottom of this page:

<http://www-stat.stanford.edu/~naras/jsm/NormalDensity/NormalDensity.html>