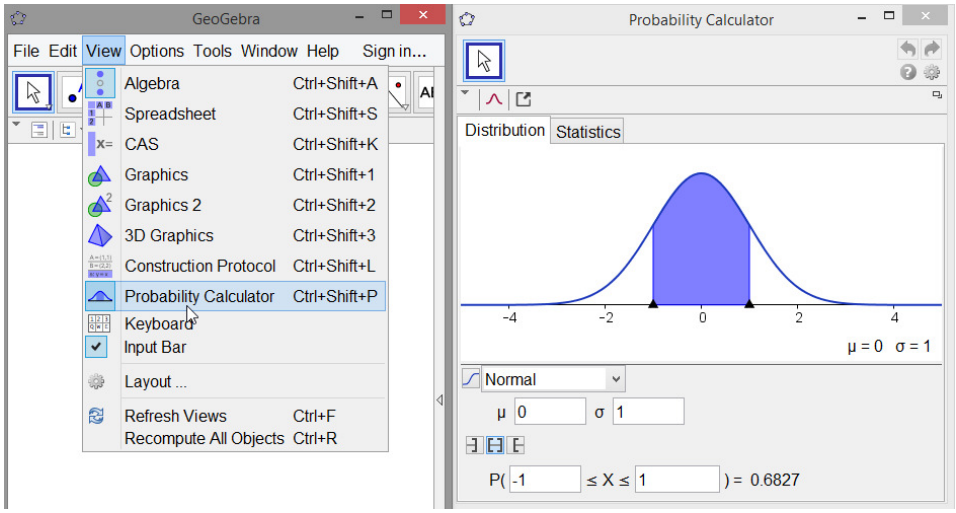
Probability Calculator in GeoGebra

This feature gives you a calculator that instantly evaluates and displays probabilities from a selection of inbuilt probability distributions.

Open GeoGebra and then select View->Probability Calculator, or press Ctrl+Shilt+P.



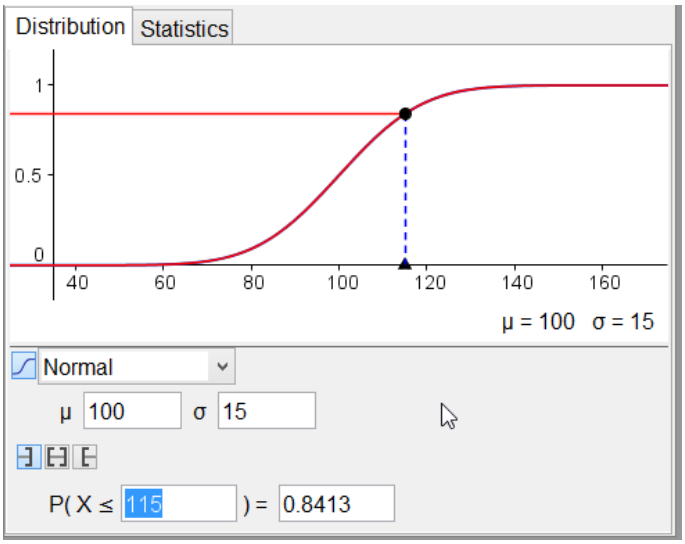
The default distribution is the standard normal distribution, as shown above, which demonstrates the rule of thumb that approximately $\frac{2}{3}$ of the data lies within 1 standard deviation of the mean.

Check that IQ scores, $\mathrm{N}(100, 15^2)$, also has the same proportion within 1 SD of the mean.

Notice how the axes have rescaled to adjust for the change in population parameters, but the curve is in the same position on screen.

The buttons  switch between the forms $\mathrm{P}(X \leq a)$, $\mathrm{P}(a \leq X \leq b)$ and $\mathrm{P}(X \geq b)$ respectively.

The button  switches between the probability density function (pdf) and the cumulative distribution function (cdf) which is the function usually tabulated in normal tables.



In both views you can also dynamically adjust the limit(s) graphically using the triangle 

Question to investigate: Change one number in the following statement to make it true:

$$\text{If } X \sim \mathrm{N}(100, 15^2) \text{ then } \mathrm{P}(X < 90) = 0.1$$