There are two built in commands on the TI-83 for computing statistics with a normal curve: **normalcdf** and **invnorm**. All of these commands can be found in the Distribution menu by pressing $\boxed{\text{2nd}}$ $\boxed{\text{VARS}}$.

For all of these commands, if the mean and standard deviation are not provided, the calculator assumes that you are talking about the standard normal random variable. (i.e. $\mu = 0$ and $\sigma = 1$).

Note: to enter $1E99$ press $\boxed{1}$ $\boxed{\text{EE}}$ $\boxed{9}$ $\boxed{9}$. The EE represents scientific notation and the $\boxed{\text{EE}}$ is found by pressing $\boxed{\text{2nd}}$ $\boxed{,}$.

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normalpdf(x, μ, σ) will evaluate the probability density function, $f(x)$ as shown below, at the value of x for a particular μ, and σ. This command is not used in this course.

$$f(x) = \frac{1}{\sqrt{2\pi}\sigma}e^r \qquad \text{where } r = \frac{-(x-\mu)^2}{2\sigma^2}$$

normalcdf(lower, upper, μ, σ) computes the probability that a continuous R.V. X is between the lower bound and the upper bound. The chart shows the lower bound and the upper bound to be entered into the command for these different probability questions.

Calculate	Lower	Upper
$P(X \le a)$	$-1E99$	a
$P(X \ge a)$	a	$1E99$
$P(a \le X \le b)$	a	b

invnorm(area, μ, σ) will return a value A that satisfies the equation $P(X < A) = $ area. Suppose you are asked for the value of a that satisfies $P(X > A) = B$, where B is an area under the curve. This can be answered by translating the question into the following: what value of A satisfies $P(X < A) = 1 - B$.