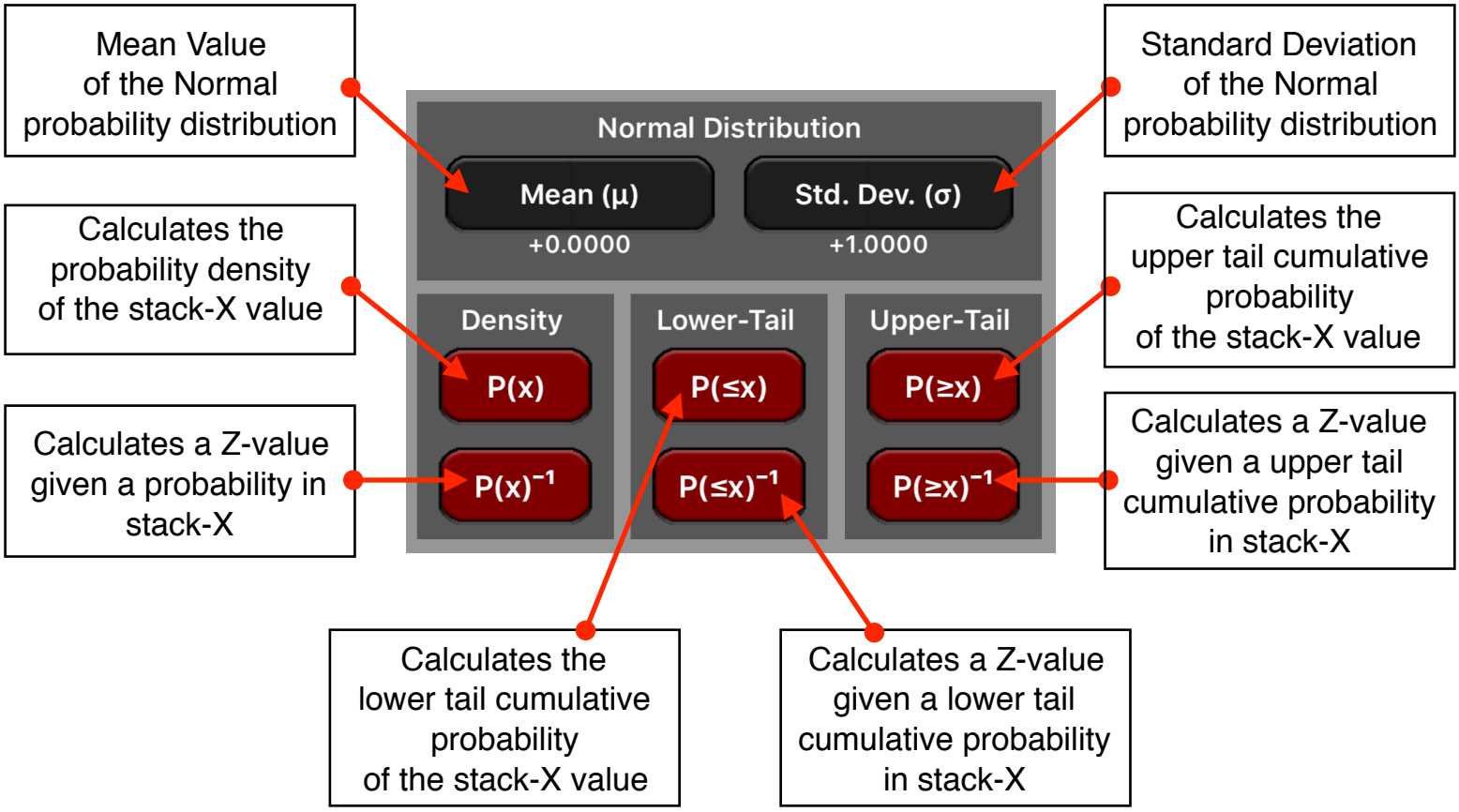
Normal Distribution Tool

This tool adds Normal probability distribution to expand the original HP-11C calculator. To show it, press the **OPT** key, touch the "**Statistics**" menu button, and select the "**Normal Distribution**" tool.



The following examples assumes the "Probability Calculations" tool is already visible in the calculator and the display format is set to "FIX" with 6 decimal places (**[f] [FIX] [6]**).

Example 1: (Normal probability density)
The variable Z is a normal random variable with mean 35 and standard deviation of 10. What is the probability that Z is 25?

Keystrokes	Description
"35" [μ]	Type the mean and enter it.
"10" [σ]	Type the standard deviation and enter it.
Type "25"	Type the z-value
[P(x)]	Calculate the probability. **Result = 0.024197**

What is the z-value with probability of 1%?

Keystrokes	Description
Type "0.01"	Type the probability (1%)
[$P(x)^{-1}$]	Calculate the z-value. **Result = 18.364817** in stack-X and **51.635183** in stack-Y. Both values are solutions

Example 2: (Normal Lower-Tail Probability)
The variable Z is a standard normal random variable. What is the probability that Z is less than -1.7.?

Keystrokes	Description
"0" [μ]	Type the mean and enter it.
"1" [σ]	Type the standard deviation and enter it.
Type "1.7" **[CHS]**	Type the z-value
[P(≤ x)]	Calculate the probability. **Result = 0.044565**

Example 3: (Inverse Normal Lower Tail Probability)
What is the z-value corresponding to a lower tail cumulative probability of .025?

Keystrokes	Description
Type “0.025”	Type the probability
[P(≤ x)$^{-1}$]	Calculate the corresponding z-value. **Result = -1.959964**

Example 4: (Normal Upper Tail Probability)
The variable Z is a standard normal random variable. What is the probability that z is greater than 1.2 or less than -1.2?

Keystrokes	Description
Type “1.2”	Type the z-value
[P(≥ x)]	Calculate the Upper-Tail probability. **Result = 0.1150070**
[g][LSTx] [CHS]	restore the z-value and change sign
[P(≤ x)]	Calculate the Lower-Tail probability. **Result = 0.1150070**
[+]	Add the Upper & Lower probabilities. **Result = 0.230139**