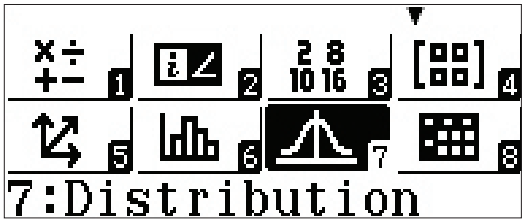
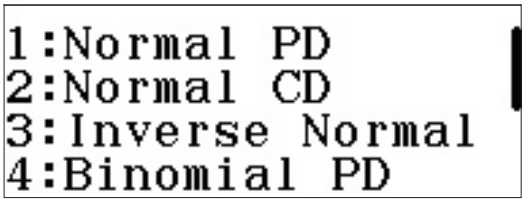
DISTRIBUTION

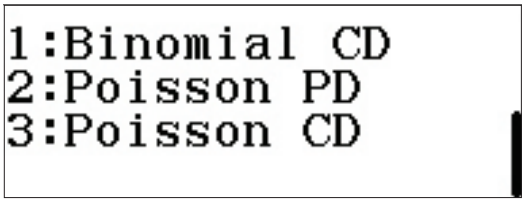
The **fx-991EX** can quickly generate probability distribution tables, covering the Normal, Inverse Normal, Binomial, and Poisson distributions.

From the Main Menu, use the arrow keys to highlight the Distribution icon, then press [=] or press [7].

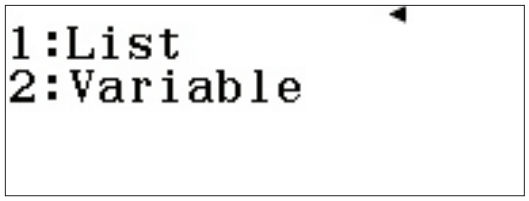


Several distribution choices appear. Use [▼] to access the second page.

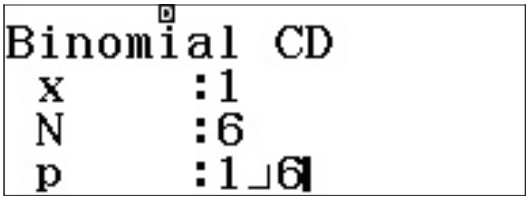




Select [1] (Binomial CD) from the second page to analyze the following Binomial Distribution problem: "A fair 6-sided die is rolled six times. Find P(6 comes up at least twice)."

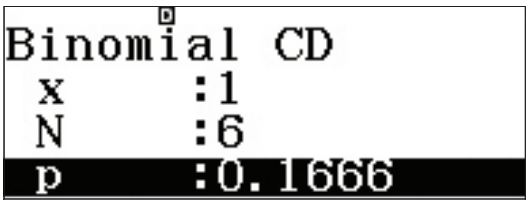


To enter the values of *x* (number of successes), *N* (number of trials), and *p* (probability of success), press [2] (Variable). Input the values as shown, using [▤] to create the fraction separator.



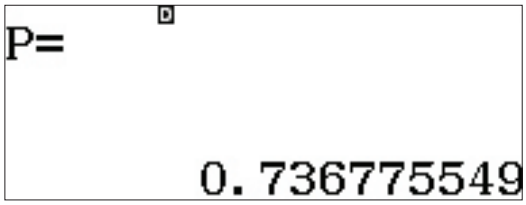
After pressing [=] to input the value of *p*, ClassWiz automatically converts the fraction into a decimal for its own purposes.

Press [=] again to calculate the probability.

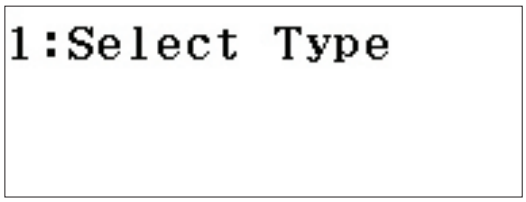


A probability of 73.7% is displayed.

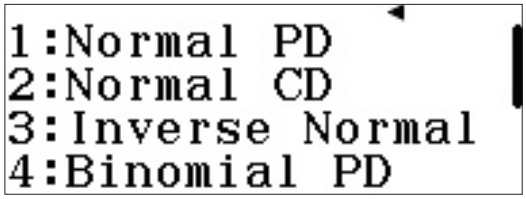
Because $x = 1$ was entered, the calculator calculated P(≤ 1 six is rolled). This provides a great opportunity to use the **complement** of an event: P = 1 – 0.737 = 0.263 = 26.3%.



To display the probabilities of obtaining *any* number of sixes in 6 rolls, press OPTN 1 (Select Type).

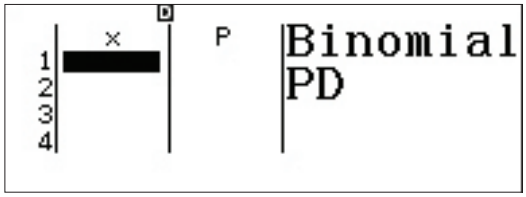


This time, choose 4 (Binomial PD).

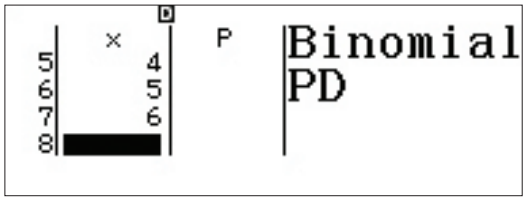


Because the calculation is for probabilities for several different numbers of successes, select 1 (List).

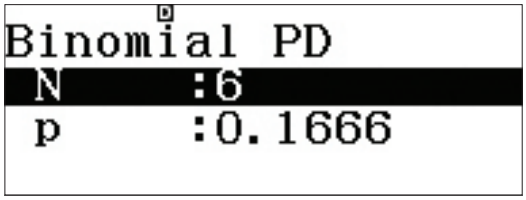
Enter the values 0, 1, 2, 3, 4, 5, and 6 into the "x" column (which represents number of successes). Press = after each input.



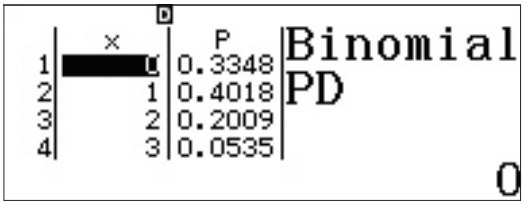
Once the final value has been entered, press = again to end the data entry process.



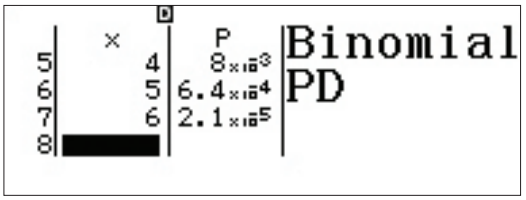
Notice, the values of *N* and *p* are preserved from the cumulative probability calculation.(*N* and *p* are global calculator variables.)



Press [=] one more time to calculate the probability distribution table.

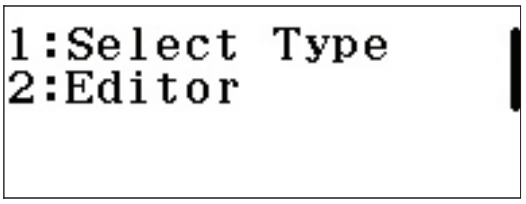


Notice how the small probabilities are expressed in proper scientific notation!



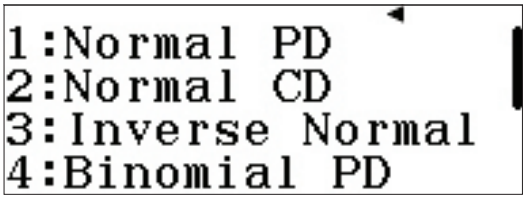
INVERSE NORMAL

To calculate an Inverse Normal Distribution, press [OPTN] [1] (Select Type).

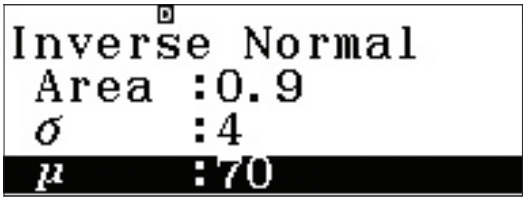


("Editor" edits the previous PD's data list.)

Select [3] (Inverse Normal).



Input the values as shown to answer the question: "If the heights of U.S. males are normally distributed with a mean of 70 inches and a standard deviation of 4 inches, what range defines the tallest 10% of U.S. males?"



Press [=] once more to reveal the result. To be in the top 10% of U.S. males by height, a man must be over 75 inches (6'3") tall.