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 $P(\leq 1 \text{ six is rolled})$. 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 $\text{OPTN} \ 1$ (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 $\text{F}2$ after each input.

Once the final value has been entered, press $\text{F}2$ 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 \( \equiv \) 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 \( \text{OPTN} \ 1 \) (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 \( \equiv \) 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.