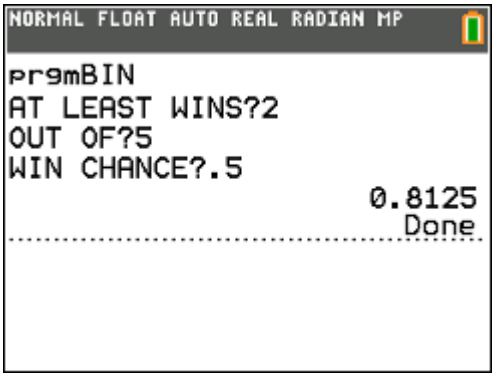
Binomial Addition Example



A coin is tossed 5 times. What is the chance you will have at least 2 heads? Answer: 81.25%

The program calculates the probability for each outcome and adds them to find the total probability.

Each win can be calculated by multiplying:

Combinations	Win Chance	Loss Chance	Probability
5 nCr 2	$.5^2$	$(1-.5)^{(5-2)}$	0.3125
5 nCr 3	$.5^3$	$(1-.5)^{(5-3)}$	0.3125
5 nCr 4	$.5^4$	$(1-.5)^{(5-4)}$	0.15625
5 nCr 5	$.5^5$	$(1-.5)^{(5-5)}$	0.03125
		Total	0.8125

Variables

A – Individual total for each probability in the loop
B – Running total of all probabilities
W – Chance of desired outcome occurring
X – Minimum number of desired outcomes
Y – Maximum outcomes
Z – Used to step through outcomes

Step-by-step

1) Input the minimum number of desired outcomes
2) Input the maximum number of outcomes

3) Input the chance of the desired outcome
4) Resets the running total to 0
5) Loop that steps through desired outcomes
6) Combination for specific outcome is stored as A
7) A is multiplied by the chance of desired outcome
    occurring and not occurring then stored as A
8) A is added to the running total B
9) End of loop from line 5
10) Display total B