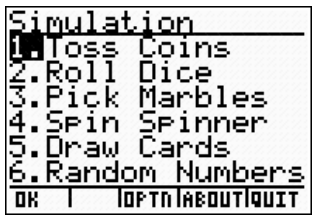
Probability Simulation

CATEGORY: Tool

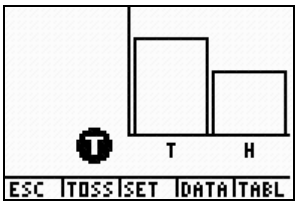
DESCRIPTION
Probability Simulation makes it possible to simulate very easy and fast some probability experiments on the TI-83/84 Plus.

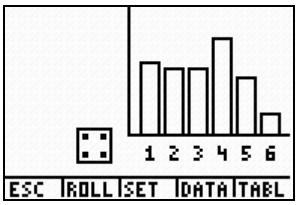
DIDACTICAL SUGGESTIONS
With Probability Simulation you can visualize several properties and laws of the Theory of Probability. The real data obtained out of the experiments can be used to introduce some discrete probability distributions and to do statistic.

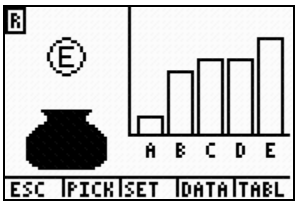
Probability Simulation contains the following experiments:

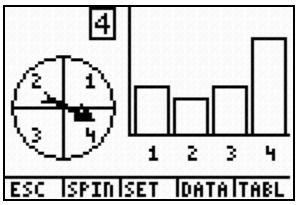


The menus of the experiments are more or less the same. With the following screen shots we will give a short overview of the experiments. While doing the first four experiments the following two menus are available.

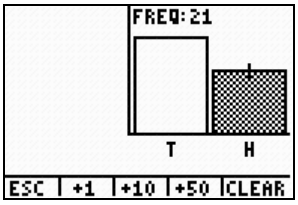


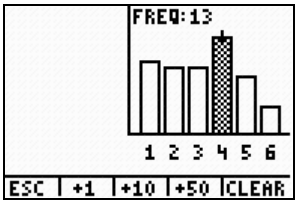


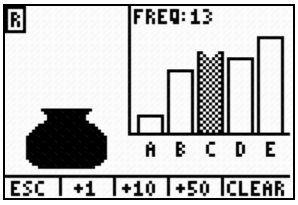


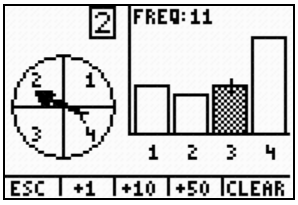


And with the ◀ ▶ keys you display the frequency or probability (depending on the settings), a kind of trace mode.

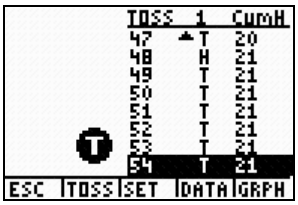


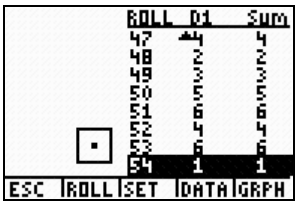


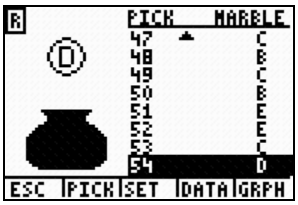


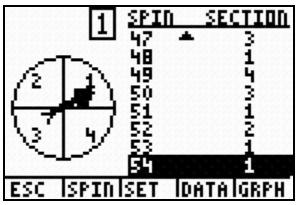


The histogram can be replaced by a table (TABL ↔ GRPH) to see the data of the simulation.





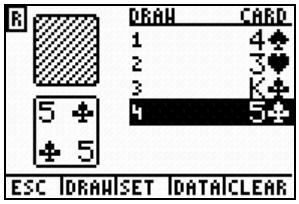


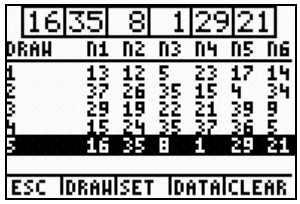


An action (Toss, Roll, Draw or Pick) can be stopped by pushing [ON].

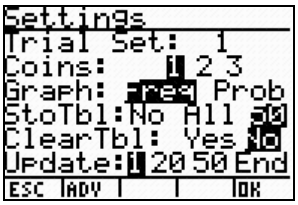
And the data obtained out of the simulation can be stored in lists by the DATA option.

For the other two experiments only one menu is available and also only the table with the data.

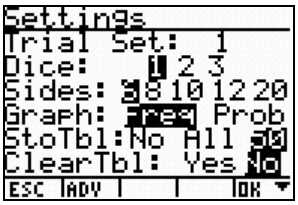




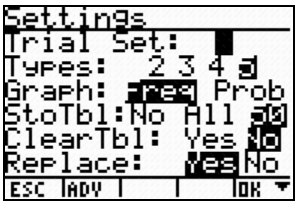
With the `SET` option you can manually change the settings of the experiments as follow:



COINS



DICE



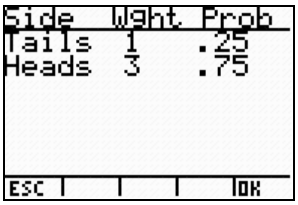
MARBLES

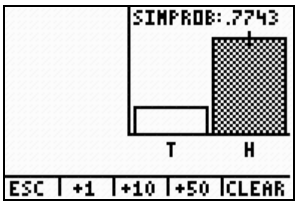
SPINNER

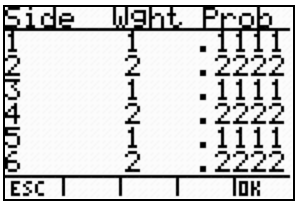
The experiments mentioned above have the following common options (sometimes you need to scroll down) and options to change the amount of coins, dice, marbles and sections:

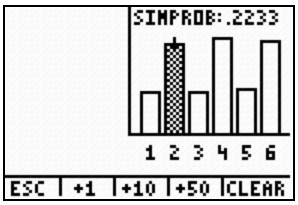
`Trial` The amount of trials by pushing `TOSS`, `ROLL`, `DRAW` or `SPIN`
`Graph` The graph selection will display the frequency or the probability
`StoTbl` The viewable amount of trials in the table
`ClearTbl` Set this to yes to clear the data from the `SET` menu
`Update` The amount of trials before the graph/table will be updated.

With the `ADV` option on the `Settings` screen you can rig the experiments. Two examples:

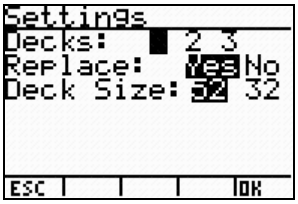


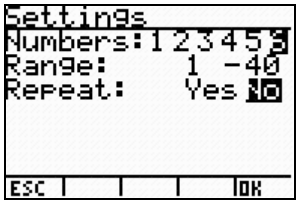






For the experiments *Draw Cards* and *Random Numbers* you can only change the specific settings for the cards and the numbers.





POINT OF VIEW

Probability Simulation can be used in several classroom situations: to introduce probability notion, to show sampling variations, to show the simulation of several experiments linked to chance, …