SAMSETUP

The SAMSETUP program is designed to help you adjust the performance of the SAM robot. It creates a list, $_LSAM$, which records key characteristics of the robot which are necessary for precise and effective motions. After you run SAMSETUP, the program can be deleted from your calculator.

```
** SAMSETUP **


CALIBRATE SAM

LABPRO  +  SVP-A

<ENTER> TO START
```

➢ If you make changes to the robot (for example changing wheels) you will need to run the program again.

➢ If you pass programs from one calculator to another, it is essential that you also transfer the list, $_LSAM$, or that you again run SAMSETUP on the new calculator.

SAMSETUP's main menu gives the options shown at right.

```
SAMSETUP
1:SHOW CURRENT
2:INPUT VALUES
3:CHECK MOTIONS
4:TEST SPEEDS
5:QUIT
```

1: SHOW CURRENT displays the data currently stored in the list $_LSAM$. Before proceeding further, it's best to check that the motor type shown under this menu agrees with the motor type on the robot. Most of the other values are less critical initially.

2: INPUT VALUES allows you to enter values from the keyboard for the wheel radius, robot radius, motor characteristics, and robot electronics. This may sometimes be the quickest or easiest way to enter data, but it is generally not the most accurate. You should use this option, for example, if you need to correct the motor type, but most users can skip ahead to the important step—"Check Motions."

3: CALIBRATE guides you to put the robot through a pair of test movements, one forward and one pivoting. In each case, the robot will rotate its wheels five times and you need to report back to the program how far the robot actually moves. This allows the program to calculate the wheel radius and the effective radius of the robot. Performing this calibration carefully will have a significant benefit for the precision of the robot.

4: TEST SPEEDS allows you to experiment with a variety of forward speeds (in centimeters/second) and pivot speeds (in degrees/second). You need to do enough testing to decide on

   (a) a good, all-purpose "default speed" for most linear movements,

   (b) a maximum useful speed for linear motions, and

   (c) an all-purpose default speed for pivots.

You will need to record your choices, and then enter them using INPUT VALUES.

Once you have calibrated the list, $_LSAM$, you can delete the SAMSETUP program from your calculator.

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