Unit 5: Graphics | **Skill Builder 1: Drawing**

In this first lesson for Unit 5 you will learn about some of Drawing commands that draw shapes on the Graph screen.

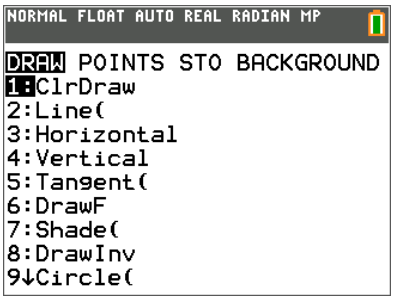
Objectives:

- Use the [draw] menu to get a drawing command.
- Learn the syntax of some of the drawing commands.
- Learn the difference between commands that use point coordinates and pixel coordinates.

The [DRAW] Menu

1. From the HOME screen press [DRAW] ([2nd] [PRGM])
2. Select **Line(**
3. Complete the command with **0,0,3,4)** so that the complete command states: **Line(0,0,3,4)**
4. Press [ENTER] to see a line drawn from the origin to the point (3, 4) on the GRAPH screen.

Most drawing commands such as **Line**, **Circle**, and **Pt-On** use the WINDOW coordinates as the frame of reference.

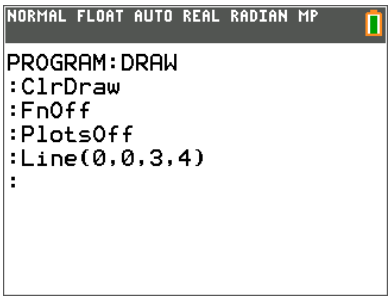


Drawing in Programs

There are many TI-Basic programming tools that affect the appearance of the GRAPH screen. Here we examine a few of them:

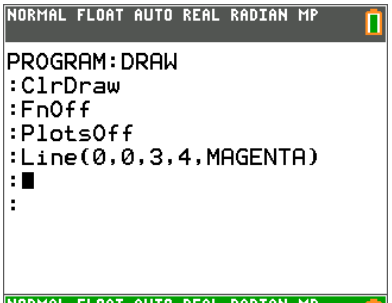
- **ClrDraw** to clear any drawn objects [DRAW]
- **FnOff** to turn functions off [VARS] **YVARS On/Off**
- **PlotsOff** to turn stat plots off

Use the [DRAW] menu to select an object to draw. See the example to the right.



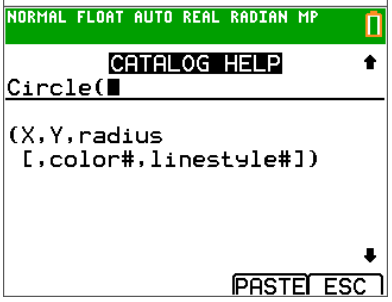
Color Options (TI-84 C and TI-84 CE only)

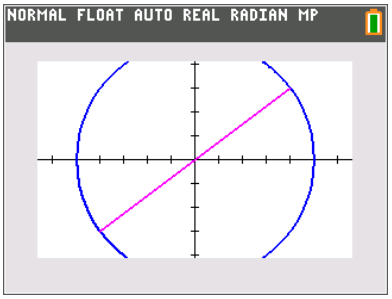
The **Line**(command has an optional fifth argument which determines the color to be used. To select a color press [PRGM] **COLOR** or [VARS] **COLOR** and select your color. The *name* of the color is inserted into your program but simply represents a number (BLUE=10, RED=11, BLACK=12, etc.). See the example to the right. Many drawing commands have a color option. On the TI-84 Plus the fourth argument can be a 1 or a 0: 1 to draw the line in black, 0 to draw it in white.



Help!

Help with any command in the calculator is available by pressing the [+] key while highlighting the command on any menu. To the right is the help screen for the **Circle(** command. It shows the number and order of the entries. **X**,**Y** are the coordinates of the center of the circle, then the radius. The [*optional*] entries are the color name or number and the line style (1 to 4). You can complete the command right on this screen and then press the [TRACE] key to 'PASTE' the command into your program.





Can you draw this?

Can you duplicate the drawing at the right in a program?

Hint 1: it's only two commands but the window and the numbers are important!

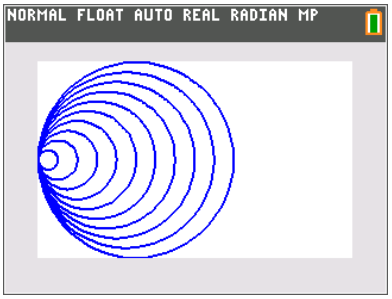
Hint 2: (**X**, **Y**) is the center of the circle and **radius** is the distance from the center to the circle. (color# and linestyle# are optional)

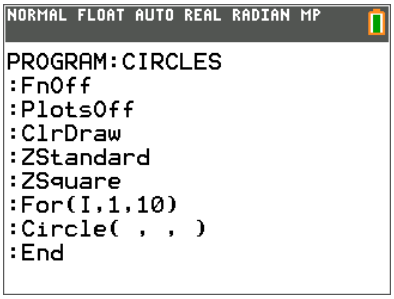
Tip: you can set the GRAPH window in a program. While editing a program press [ZOOM] and choose a setting or assign values for each window edge by assigning values to the variables found on [VARS] Window… such as:

-20→Xmin

Circle Art

Complete the Circle statement in the program below to produce the picture to the right.





Note: **ZStandard** *and* **ZSquare** *are found on the* [ZOOM] *menu.*

Copying one program to another:

1. *Start a new program.*
2. *In the Editor press* [RCL] *(*[2nd] [STO▶]*).*
3. *Press* [PRGM] *and arrow to EXEC.*
4. *Select the program you want to copy. See the screen to the right where we are in the process of copying prgmCIRCLES into prgmCOPY.*
5. *Press* [ENTER] *to paste the code into the new program.*