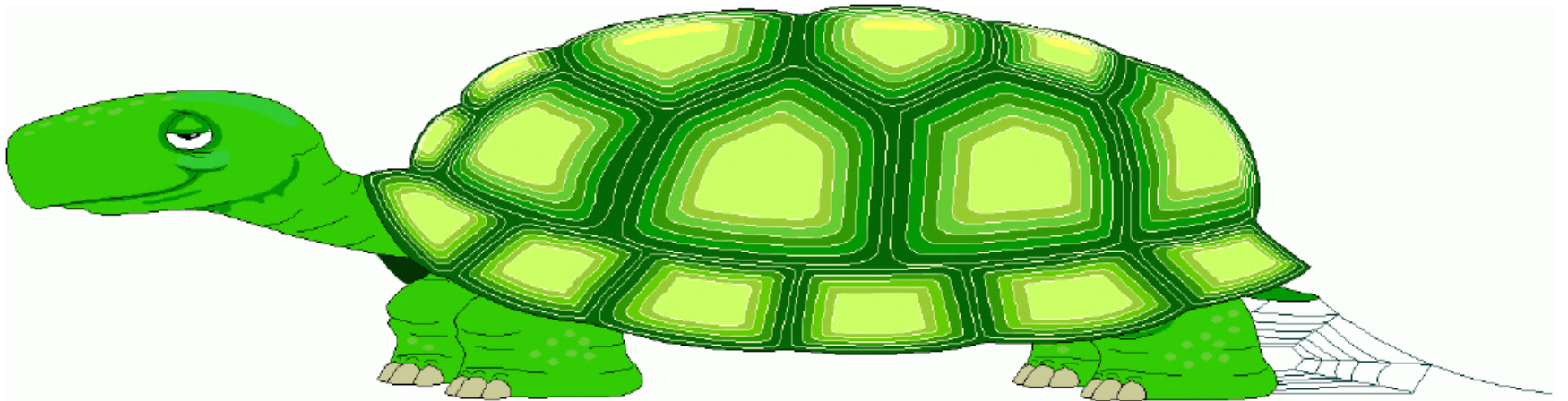


Advanced Logo



A Few Useful Commands

SETPENSIZE This command sets the size of the “pen” your turtle uses. It is followed by **two numbers in square brackets**. The first number is the width and the second is the height.

```
SETPENSIZE [5 5]
```

SETSCREENCOLOR Follow this command with a **number**. You can change the color of your screen depending on the number you choose.

```
SETSCREENCOLOR 14
```

SETPOS Follow this command with **two numbers in square brackets**. You can move your turtle to a location described by these numbers. The numbers are the X and Y coordinates for your screen.

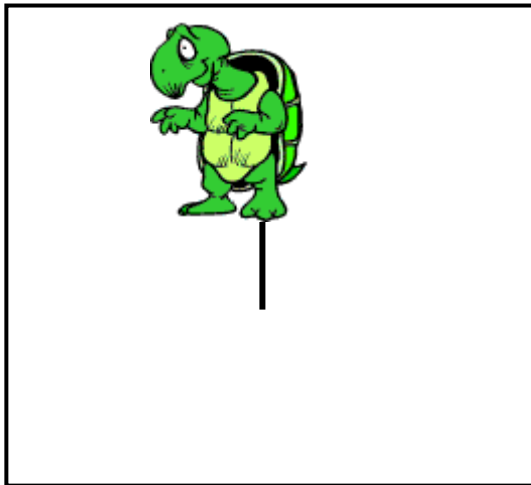
```
SETPOS [300 300]
```



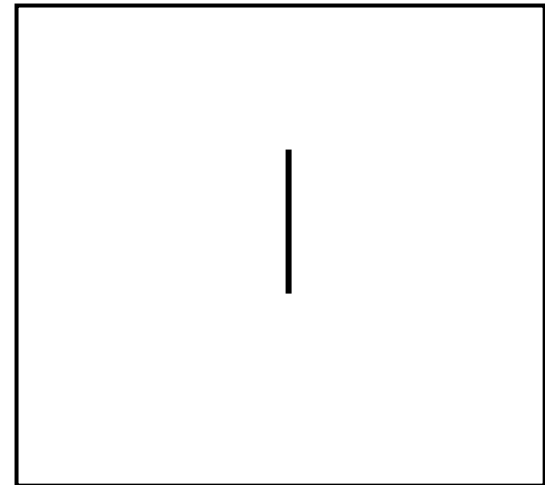
Where did the Turtle go?

HIDETURTLE This command will remove your turtle from the screen. You will still be able to draw as before, but the turtle will not be visible.

SHOWTURTLE This command does the opposite of **HIDETURTLE**. It makes the turtle visible to you on the screen.



HIDETURTLE



Parameters

When we used the basic Logo commands like **FORWARD** and **RIGHT**, we said that they were followed by a number. This number is known as a **PARAMETER**.

Here are a few examples of **PARAMETERS** we have already seen:

FORWARD 50

The **PARAMETER** is the number 50

REPEAT 4 [FORWARD 100 RIGHT 90]

SETPOS [100 100]

The **PARAMETERS** for **REPEAT** are a number and then a command (or several commands) in square brackets

The **PARAMETER** for **SETPOS** is two numbers in square brackets

Parameters and Programs

You can use **PARAMETERS** when writing your own programs. When creating a **PARAMETER**, it is named in the first line of a program, and the first character is always a colon.

Here is an example that will make a square of any size you want:

```
TO SIZED_SQUARE :size  
REPEAT 4 [FORWARD :size RIGHT 90]  
END
```

:size is the
PARAMETER



This line tells the turtle to go forward **:size** spaces, which you specify each time you use SIZED_SQUARE

Many Parameters

What if you want your program to make a rectangle? Then you would want to specify a width and a height. This means you want to have two **PARAMETERS**.

Fortunately, this is easy! You would simply **add the second parameter right after the first**.

Parameter Question 1

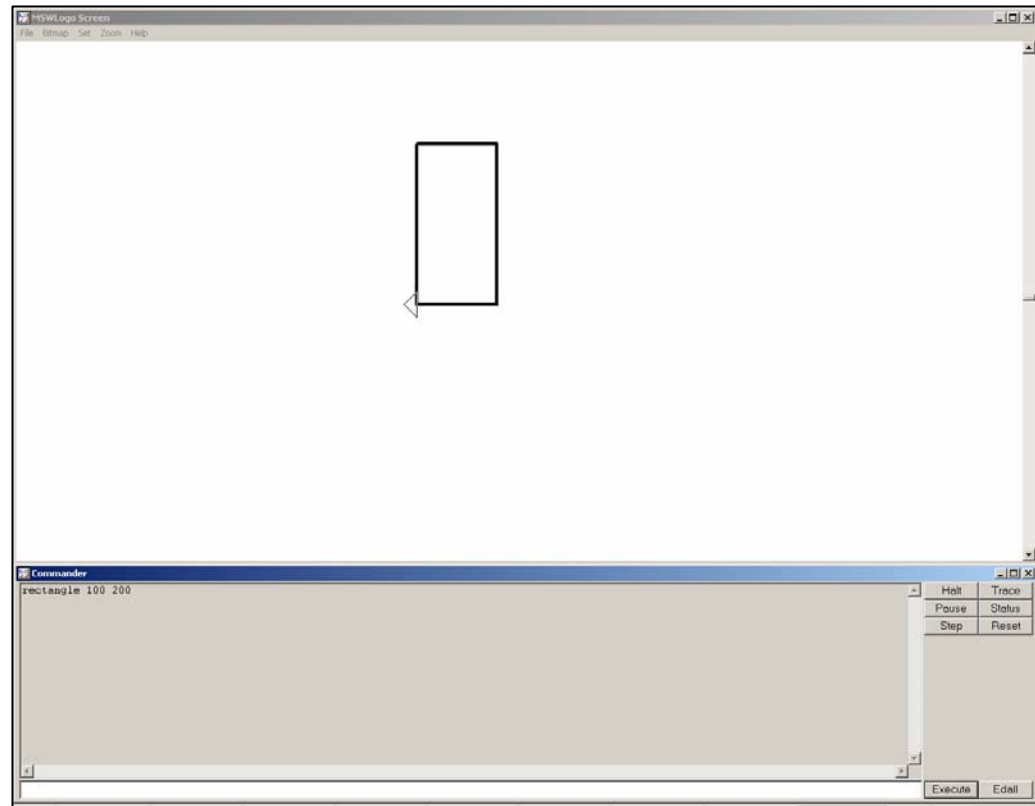
Try writing a program to make a rectangle that takes **two** parameters, a width and a height. Test it out to see if it draws as you expected.



Rectangle

TO RECTANGLE :width :height
FORWARD :height
RIGHT 90
FORWARD :width
RIGHT 90
FORWARD :height
RIGHT 90
FORWARD :width
END

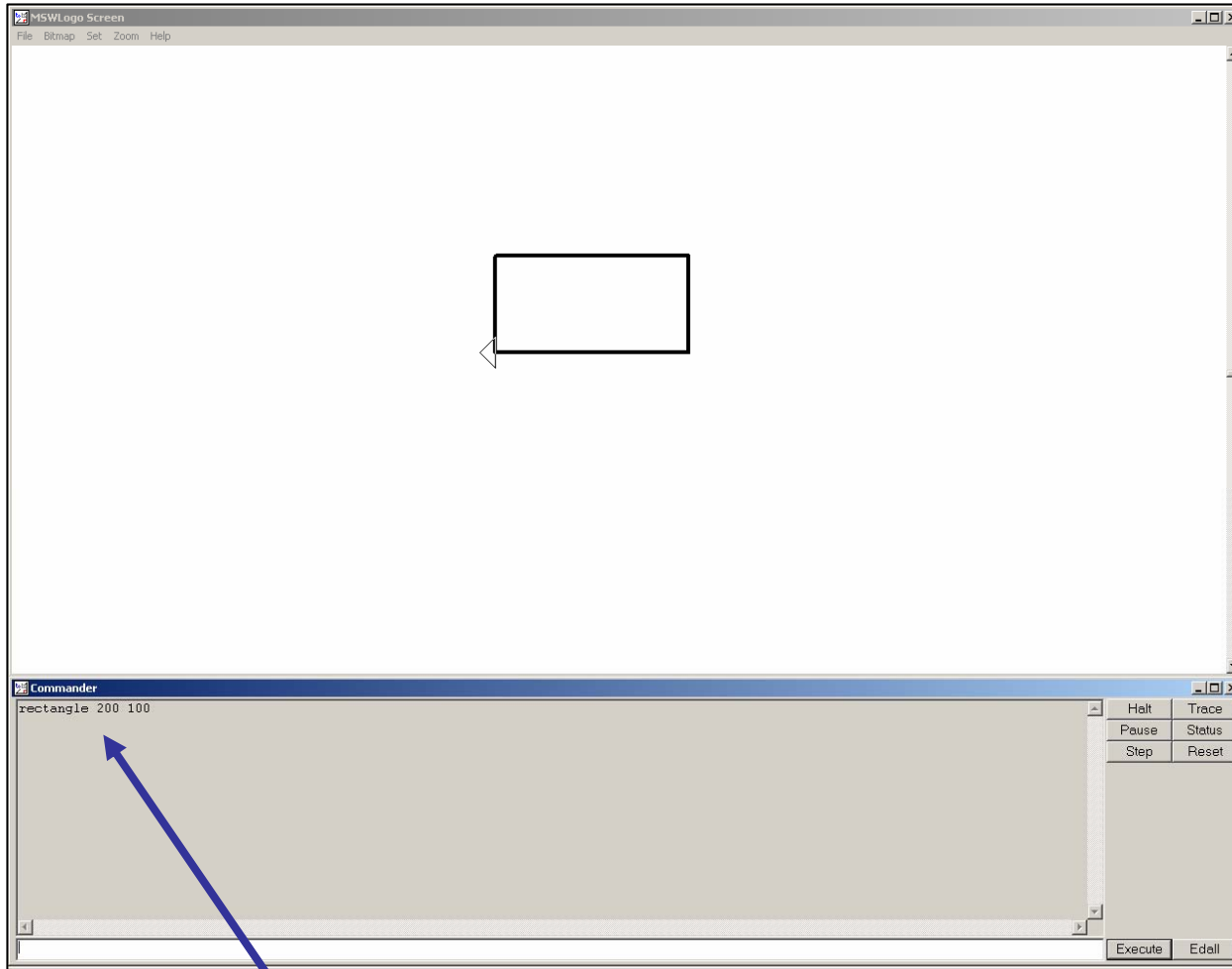
RECTANGLE 100 200



What would happen if you had instead typed in RECTANGLE 200 100?



Order Matters!



RECTANGLE 200 100

Be sure to remember the order of your parameters!



Random

RANDOM This command is followed by **one parameter** (which is a number). It will give you a random number less than the parameter.

This example will “return” a number less than 50:

```
RANDOM 50
```

You can use **RANDOM** in many ways:

```
SETPENCOLOR RANDOM 20
```

```
SETSCREENCOLOR RANDOM 10
```

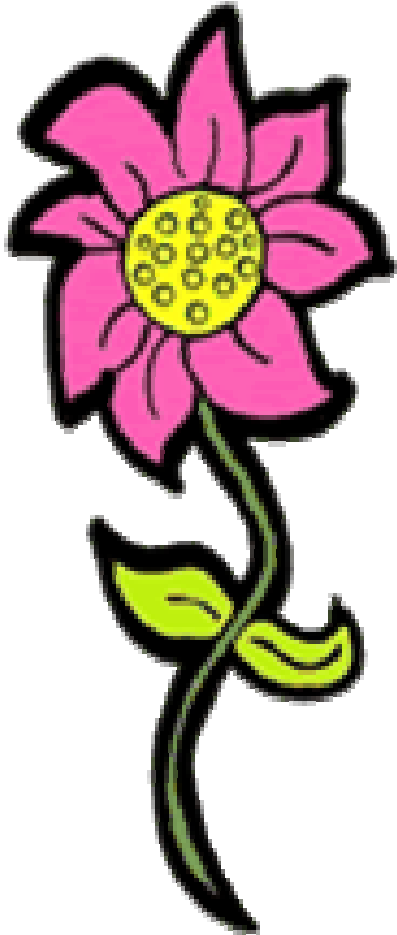
```
FORWARD RANDOM 300
```

Try a few of these for yourself.

Can you put **RANDOM** into any programs you already have?



A Few Questions



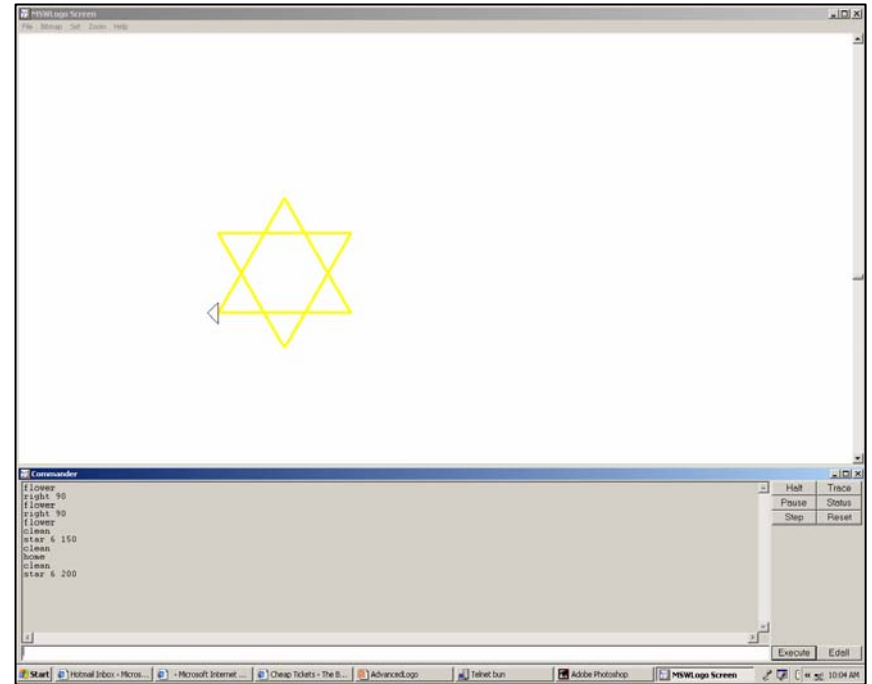
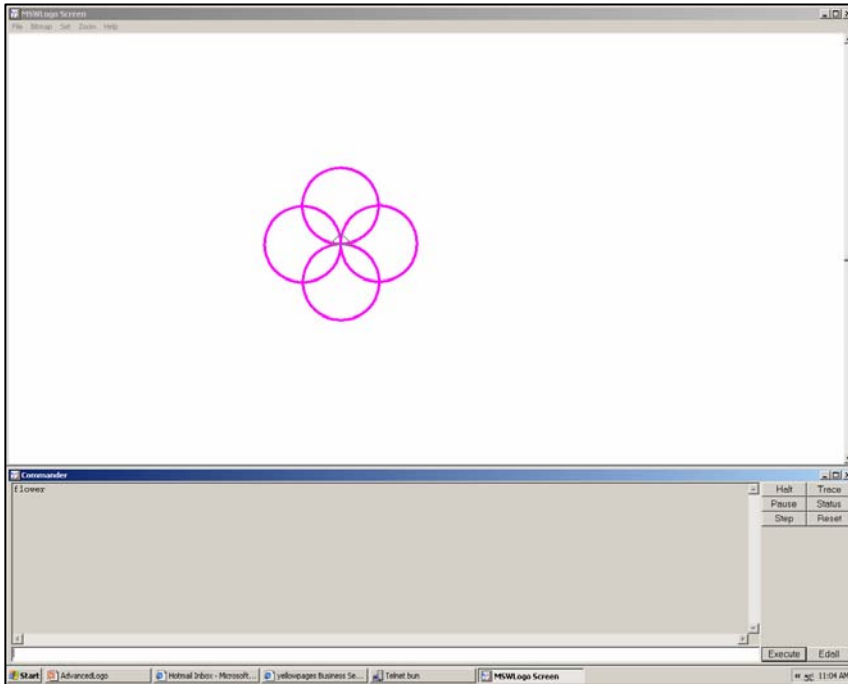
1. Write a program that will draw a flower
 - a. Draw the flower on paper first
 - b. Think about how you could do it in Logo
 - c. Then try putting it into Logo

2. How about a garden of flowers? Can you make a program that will draw several flowers at once?

3. Write a program that will draw a star.
 - a. Draw the star on paper first
 - b. Can you figure out how many degrees your turtle needs to turn each time?
 - c. Now try writing the program in Logo

Sample Answers

Here are a couple of ways your turtle could draw a flower and a star:



Try to make yours different!!!



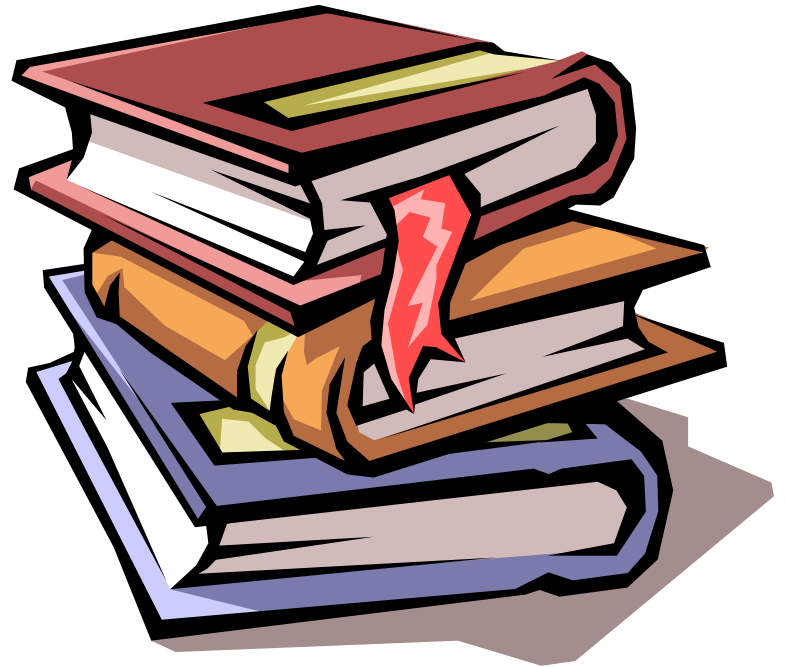
And now...

your turn!

Time to Make the Books

There are a bunch of things you need to put into your Logo book:

- ✓ A circle
- ✓ A rectangle
- ✓ A square
- ✓ A flower
- ✓ A star
- ✓ A flower garden
- ✓ `WRITECODE`
displays of code for
each picture



Don't Forget...



Don't forget to add your favorite flowers and stars to your book!

If you have time, feel free to experiment with other shapes or scenes. Add those to your book, too!