

unit 3

Graphics and Animation: Parameters in Python Part 2

i.e., an “input”

means “in other
words”

def: a **parameter** is the
technical term for the extra
bit of information that a
Python verb might require.

Grammar Fact: When ***multiple parameters*** are required, they are separated from each other with commas.

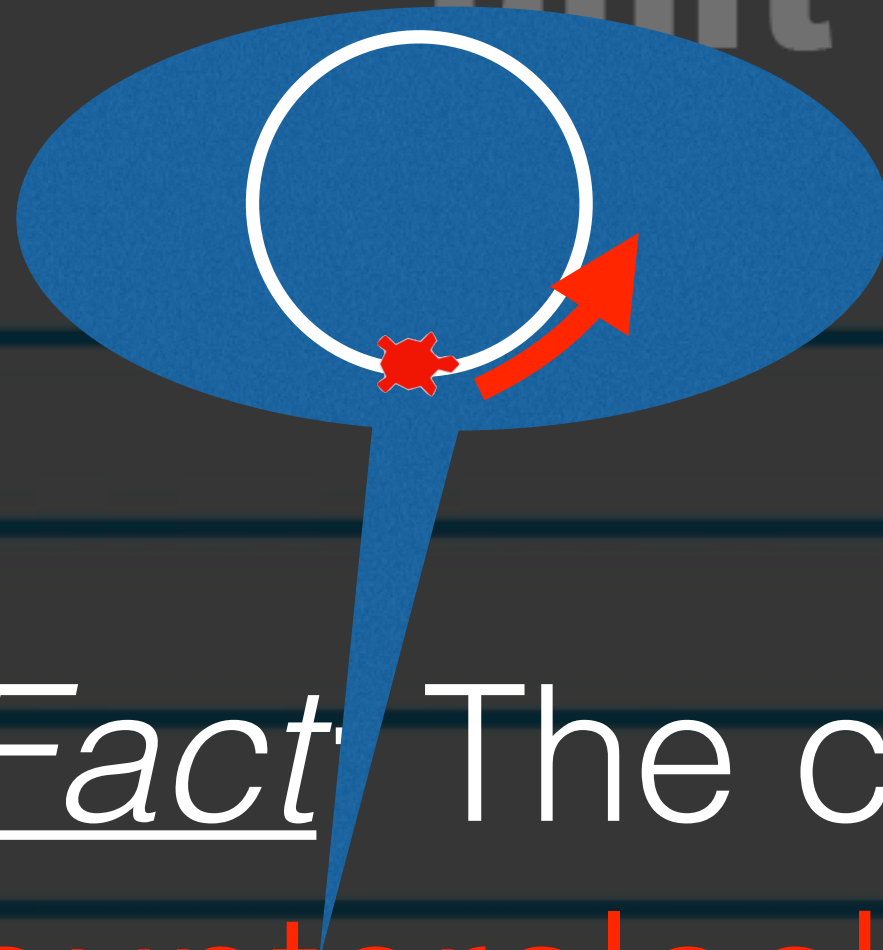
means “for example”

e.g., circle (20,180);

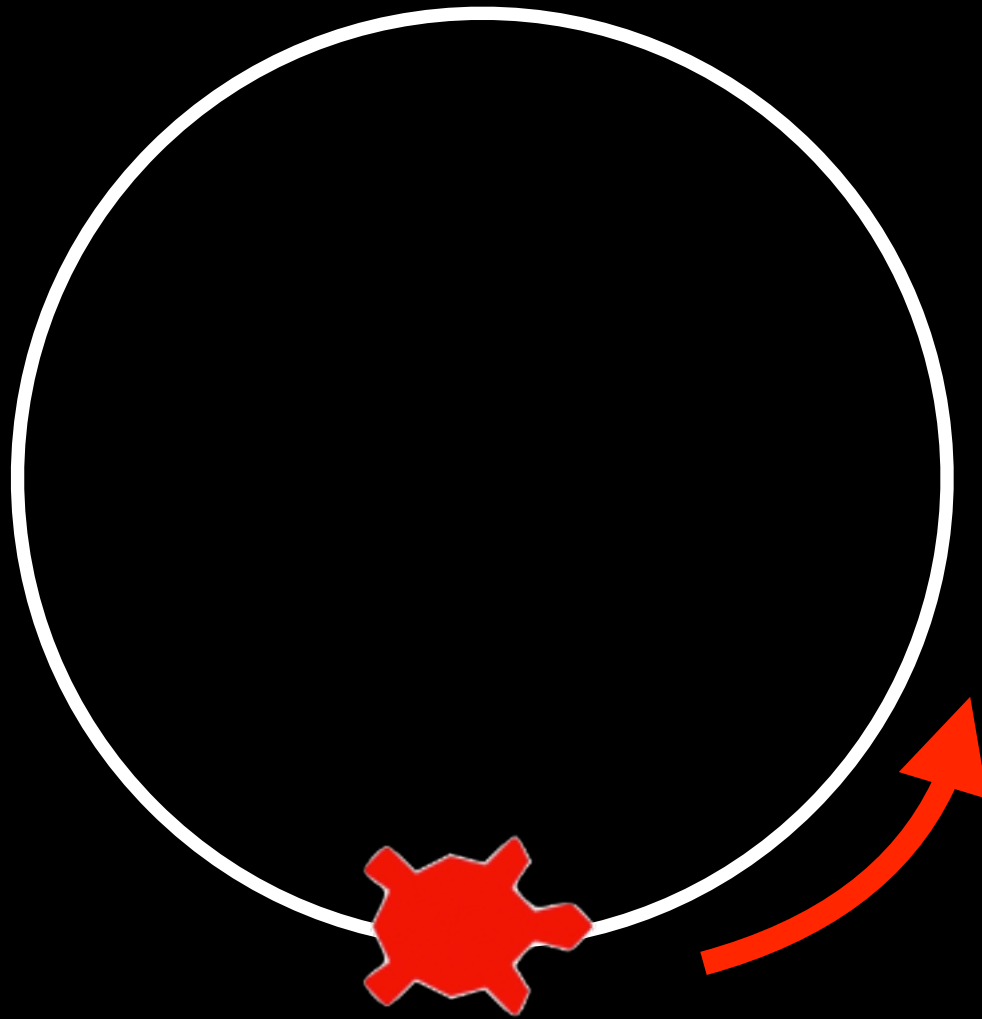
Drawing Circles, Revisited:

- Python verb: `circle`
- Parameter(s) required? yes—the `radius of the circle`
- Optional Parameter—the `number of degrees` through which
- example complete Python instruction:

```
ana.circle (40,180)
```

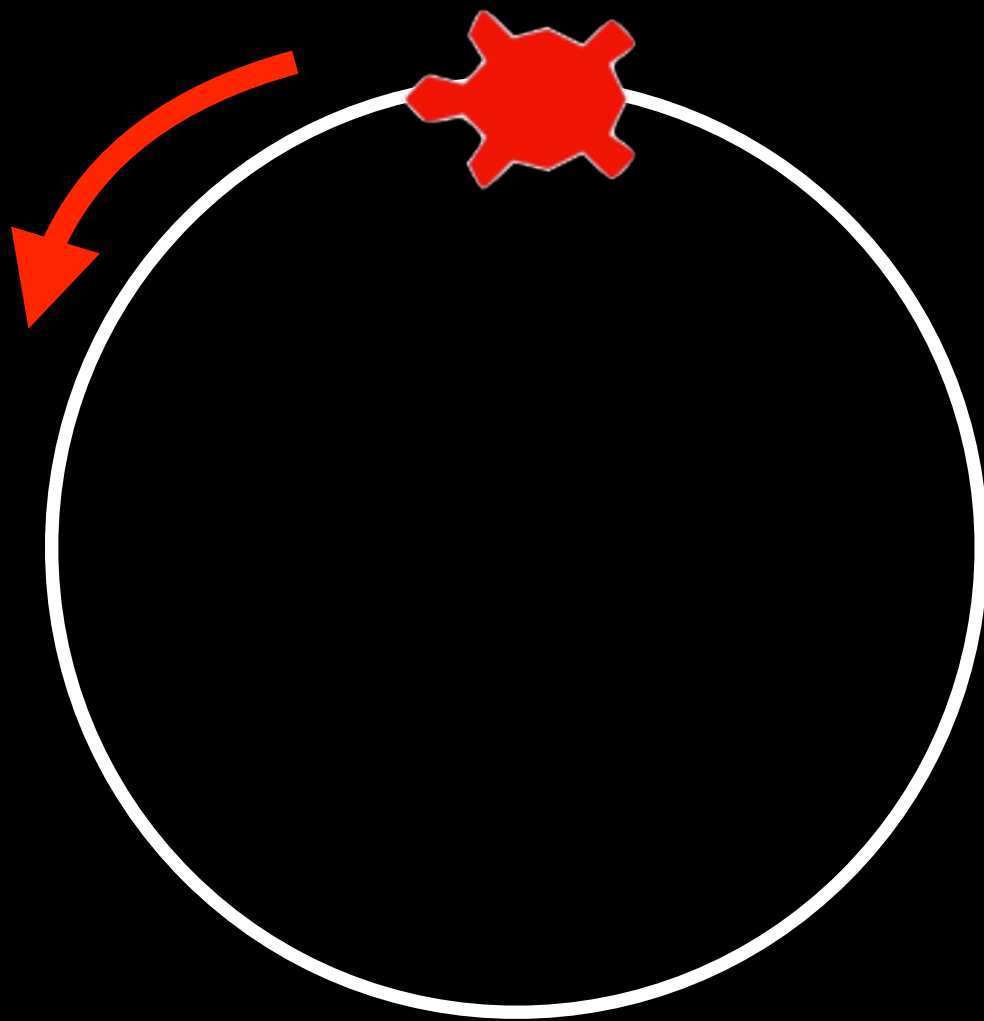


Updated Fact: The circle is drawn **counterclockwise** from wherever the turtle is currently positioned.



**In this example,
circle starts and
ends at the bottom.**

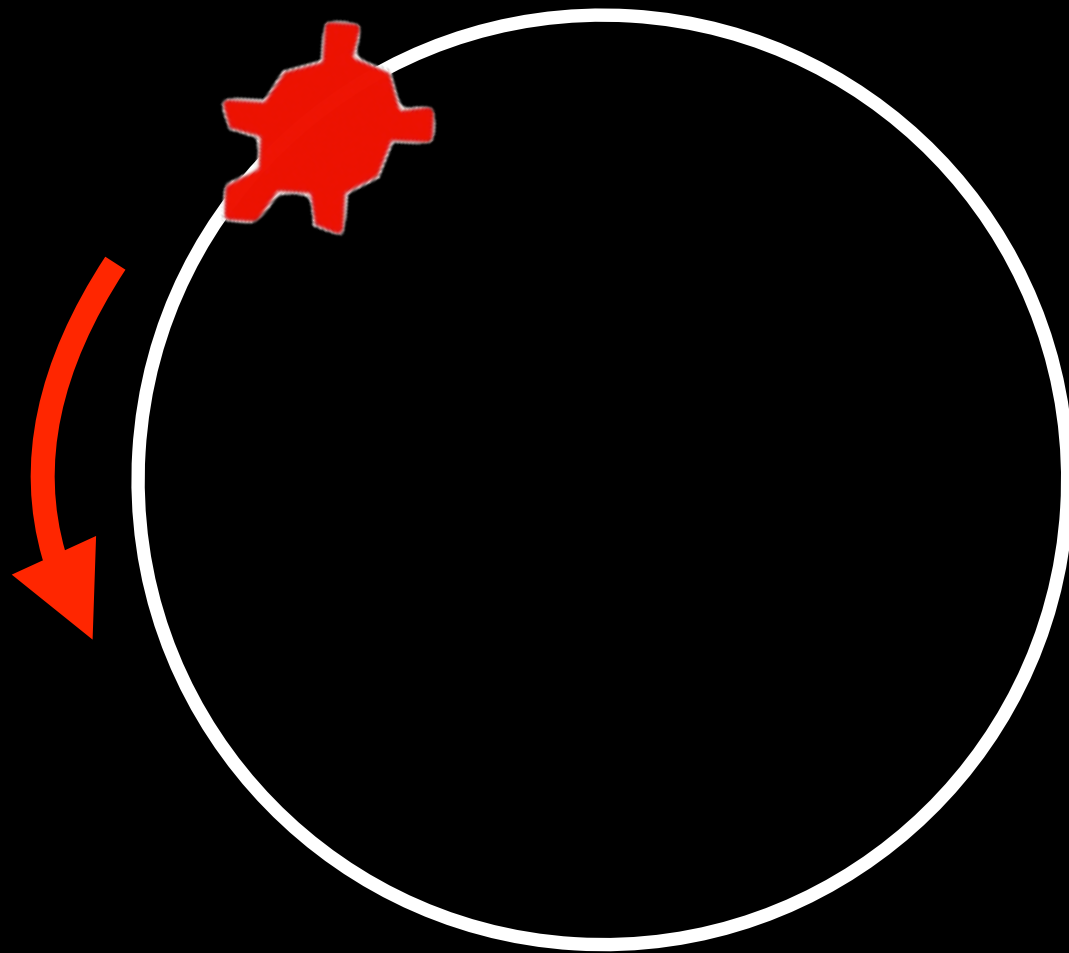
**Make sure to move the
turtle to the bottom
before drawing the
circle!**



**In this example,
circle starts and
ends at the top.**

**Make sure to move the
turtle to the top
before drawing the
circle!**

**THE CIRCLE CAN START AT
ANY POINT YOU CHOOSE!**



**In this example,
circle starts and
ends at some
random point.**

**Make sure to move the
turtle to the random point
before drawing the
circle!**

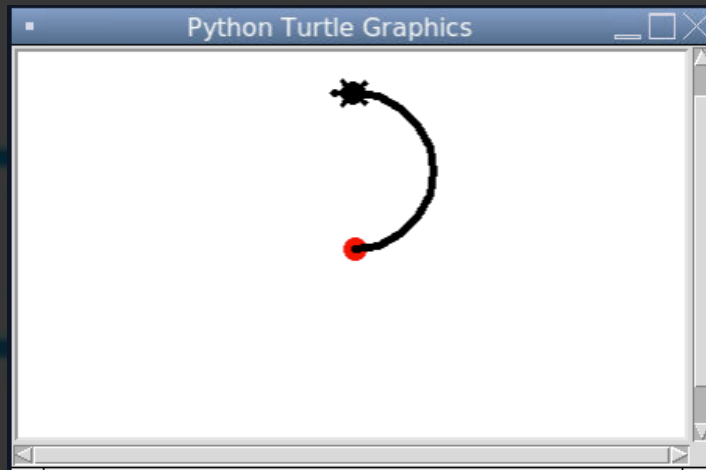
**THE CIRCLE CAN START AT
ANY POINT YOU CHOOSE!**

unit 3

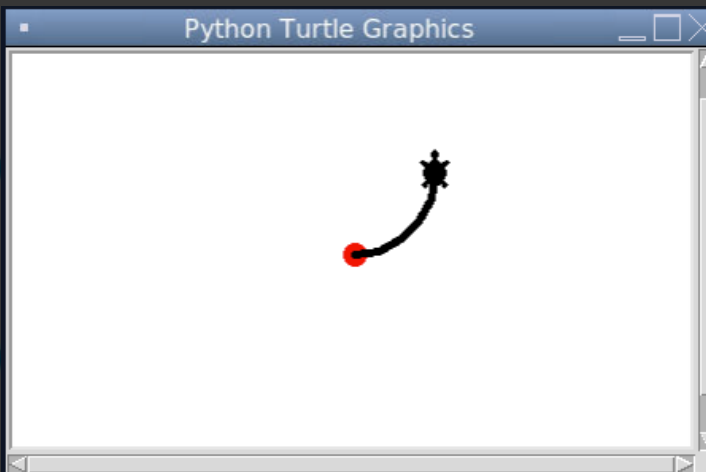
Optional, Second Parameter Effect

It is mostly used to draw
"incomplete" circles!

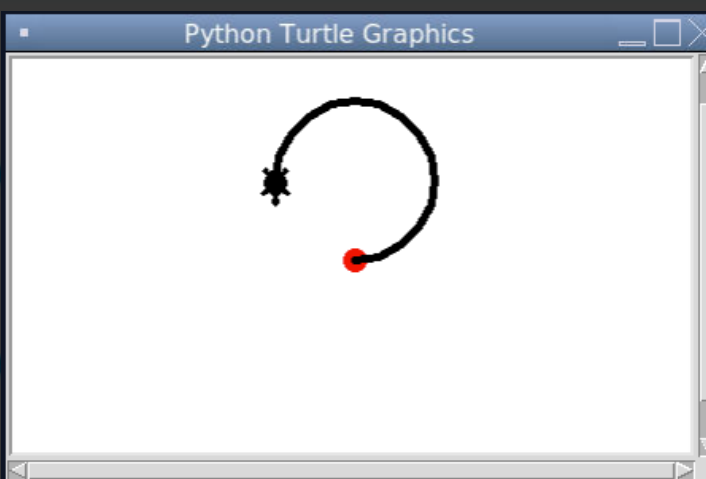
unit 3



```
ana.circle (40,180)
```



```
ana.circle (40,90)
```



```
ana.circle (40,270)
```