Useful built-in functions

Input and Output

print(1, 'two'),	List the values, separated by a space, on a line
print(1, 'two', end='')	List the values, but doesn't move to a new line
print(1, 'two', sep=', ')	List the values, separated by comma
input('How much? ')	Asks the user for input; returns the input as a string

Type casting

str(123)	Converts any value to a string
int('123')	Converts to integer (may generate ValueError)
int(123.4)	Removing the decimal part
float('123.4')	Converts to a real number (may generate ValueError)
bool(1)	Boolean (empty string or 0: False; other strings/numbers: True))

Random

```
from random import randrange, uniform
```

randrange(0, 10)	Random integer between 0 and 9
uniform(0, 10)	Random real number: 0 <= x <= 10

Program information

help(x)	Get help on specific object x
dir()	Overview of variable names
dir(x)	Overview of attributes (e.g. methods) of object x
type(x)	Get type of object x

Turtle

```
from turtle import forward, left, right, shape, penup, pendown
```

forward(n)	move forward by n pixels
left(u)	turn left by u degrees
right(u)	turn right by u degrees
shape(s)	set the shape ("arrow", "turtle", "circle", "square", ...)
penup()	stop drawing
pendown()	start drawing
exitonclick()	wait for mouse click

Maths

```
from math import sin, cos, tan, sqrt, pi
```

round(x)	rounding	sin(u)	trigonometric functions (input in radians)
floor(x)	rounding down	cos(u)	
ceil(x)	rounding up	tan(u)	
sqrt(x)	square root	degrees(r)	radians to degrees
abs(x)	absolute value	radians(d)	degrees to radians

and more – https://docs.python.org/3/library/functions.html, turtle.html, math.html