# Defining variables:

Just use the **=** operator to create a new variable!  
x = 4 # Creates a variable called ‘x’ that is equal to 4.

y = 6 # Creates a variable called ‘y’ that is equal to 6.

s = "Cat" # Creates a string variable called s that is equal to "Cat"

# Data Types:

There are **four** basic data types that a variable can be set to

**Integers**: Numbers that don’t have a decimal point in them  
x1 = 3  
x2 = -17

**Floats**: Numbers that have a decimal point  
x2 = 0.4  
y2 = -3.0

**Strings**: Represents words or characters. Declared using quotation marks " "  
cat\_name = "Mike Tyson"  
dog\_name = "Lucy"  
dog\_description = "Snuggly pug but suffers from chronic stupid"

**Booleans:** Can only be two values: True or False. Will talk more about these later

# Operators:

**Five** basic operators:

* Addition **+** (Press shift and the **=** key)
* Multiplication **\*** (Press shift and the **8** key)
* Subtraction **-** (Key to the right of the **0** key)
* Division **/** (Use the slash key, which is **?** but without holding shift)
* Assignment **=** (Use the equals sign to assign a variable to a value)

You can use parentheses ( ) for order or operation  
  
x1 = (3 + 7) \* (8 - 2) # x1 will be equal to 10 \* 6 = 60  
x2 = 3 + (7 \* 8) - 2 # x2 will be equal to 3 + 56 - 2 = 57

# Functions

Here are the functions that we’ve seen so far:

**print(**x**)** : Prints a variable to the screen  
  
x **= input(**message**)** : Asks the user to type something in, and then takes what they typed and sets it to a variable. Will use whatever message (String) you give as an argument as a prompt message before you type.  
  
x\_int = **int(**x**)**  : Type casts some variable **x** into an Integer variable  
x\_float= **float(**x**)** : Type casts some variable **x** into a Float variable  
x\_str= **str(**x**)** : Type casts some variable **x** into a String variable

x2 **= math.sqrt(**x1**):** Computes the square root of the argument (**x1**) and sets it to a variable (**x2**)