Python – MATLAB Translation Table

Operation	Python	MATLAB
math operators	2 * 2 + 5/4 – 2**4 + (3 + 3)	2 * 2 + 5/4 – 2^4 + (3 + 3)
assignment	x = 10	x = 10
list creation	x = [1**,** 2**,** 3]	x = [1 2 3]
2D list creation	x = [[1, 2, 3], [4, 5, 6]]	x = [1 2 3**;** 4 5 6]
list concatenation	x = x + [4, 5, 6] x = x + [[7, 8, 9]]	x = [x 7 8 9] x = [x; 7 8 9]
size of a list	len(lst)	**size**(lst, **2**)
list indexing	lst[0] (indices starts at 0)	lst(**1**) (indices start at 1)
range generation	range(start, stop, step) (stop value not included) (start, stop, step must be ints)	start **: step : stop** (stop value included) (start, stop, step - ints or floats)

if statement	if condition**:**
	  things = 99
	
	if a < b**:**
	  things = 99
	elif a < c**:**
	  things = 88
	else**:**
	  things = 'Who Knows'
		if condition
		  things = 99
		end
		
		if a < b
		  things = 99
		elseif a < c
		  things = 88
		else
		  things = 'Who Knows'
		end

while loop	while condition**:**
	  x = x + 1
		while condition
		  x = x + 1
		end

for loop	for i in range(10)**:**
	  x = x + i
		for i **= 0:9**
		  x = x + i
		end

logical operators	and or not	**& | ~**
relational operators	== != < <= > >=	== **~=** < <= > >=
function definition	def f(x): return (x******2)	**function return_var =** f(x) **return_var =** x**^**2 **end**
mod	x % y	**mod**(x, y)
augmented assignment	a += 1 (same as a = a+1)	not allowed

Miscellaneous

- MATLAB variable names may be composed of any combination of letters, numbers and underscores, however the first character must be a letter.
- MATLAB commands print to the screen by default. To prevent printing, end the line of code with a semicolon. For example, x = 10 will print 10 but x = 10; will not print.
- MATLAB allows separating list elements by commas (as in Python,) but commas are not required and are different from Python. For example, [[1, 2, 3], [4, 5, 6]] in MATLAB is valid, but does not do what you'd expect it to do coming from Python. In MATLAB the above line is equivalent to [1 2 3 4 5 6].
- MATLAB only accepts **single quotes** for strings. Python accepts " " and ' '.
- In MATLAB, a:b is short for a:1:b.
- In Python, indentation defines semantics. In MATLAB, indentation or lack of doesn't make a difference.
- In Python, the line continuation is a backslash (\). IN MATLAB, line continuation is indicated by an elipses (…).