

## allthemath.org Vol II Episode IV – Python cheat sheet

### Matrices:

<code>array([[3,2],[4,5],[1,4]])</code>	Create a 3×2 matrix with rows [3 2], [4 5], [1 4]
<code>zeros(shape=(7,4))</code>	Create an all-zero 7×4 matrix
<code>random.rand(7,4)</code>	Create a 7×4 matrix with random numbers between 0 and 1
<code>A.shape[0], A.shape[1]</code>	Get the number of rows/columns of a matrix A
<code>A[2,3]</code>	Get the element at row 2, column 3 of the matrix A
<code>A[:,9]</code>	Get column 9 of the matrix A
<code>A[4,:]</code>	Get row 4 of the matrix A
<code>A.transpose()</code>	The transpose of the matrix A
<code>A.dot(x)</code>	Matrix-vector multiplication of A and x (note x must be a matrix)
<code>loadtxt("filename",delimiter=",")</code>	Read data from a comma-separated text file into a matrix

### “if” statements:

<code>if condition:</code>	— or —	<code>if condition:</code>
<code>... statements ...</code>		<code>... statements ...</code>
		<code>else:</code>
		<code>... statements ...</code>

where “*condition*” can use `<`, `>`, `<=` (“less than or equal to”), `>=`, `==` (“equal to”), `!=` (“not equal to”), “and”, and “or”.