

# CSc 110 Midterm 2 Cheat Sheet

```
def name (parameters) :
    statement(s)
    ...
    return expression
```

```
for name in range(start, stop + 1):
    statement
    statement
    ...
    statement
```

```
while(condition) :
    statements(s)

variable = type(input(prompt))

if (test) :
    statement(s)
elif (test) :
    statement(s)
else:
    statement(s)
```

## Math class

| Function name  | Description                                      |
|--|--|
| ceil( <i>value</i> )   | rounds up  |
| floor( <i>value</i> )  | rounds down                                      |
| log( <i>value</i> , <i>base</i> )                                    | logarithm  |
| sqrt( <i>value</i> )   | square root                                      |
| sinh( <i>value</i> )<br>cosh( <i>value</i> )<br>tanh( <i>value</i> ) | sine/cosine/tangent<br>of<br>an angle in radians |
| degrees( <i>value</i> )<br>radians( <i>value</i> )                   | convert degrees to<br>radians and back           |

| Constant | Description  |
|----------|--------------|
| e        | 2.7182818... |
| pi       | 3.1415926... |

## Other math functions:

| Function name                        | Description           |
|--------------------------------------|-----------------------|
| abs( <i>value</i> )                  | absolute value        |
| min( <i>value1</i> , <i>value2</i> ) | smaller of two values |
| max( <i>value1</i> , <i>value2</i> ) | larger of two values  |
| round( <i>value</i> )                | nearest whole number  |

## String functions

| Function   | Description  |
|--|--|
| find( <b>str</b> )   | index where the start of the given string appears in this string (-1 if not found)   |
| substring( <b>index1</b> , <b>index2</b> )<br>or<br>substring( <b>index1</b> ) | the characters in this string from index1 (inclusive) to index2 (exclusive);<br>if index2 is omitted, grabs till end of string |
| lower()  | a new string with all lowercase letters  |
| upper()  | a new string with all uppercase letters  |

len(**thing**) – returns the length of whatever (string, list, etc) is passed to it

## Declaring and using lists

**name** = [**value**] \* **length**  
**name**[**index**] = **value**

## Random

randint(**min**, **max**)