

Python Reference Card

1. Programs and Functions

The following is an example of a Program (Calculator) with a single “main” section:

```
if __name__ == '__main__':  
    print("Calculator")
```

The following is an example of a function declaration:

```
def circle_area(radius):  
    area = math.pi * radius ** 2  
    return area
```

The following is an example of an invocation of this function:

```
radius = 5.0  
area = circle_area(radius)
```

3. Operators

Arithmetic	Operators
Addition	+
Division	/
Int/floor Division	//
Multiplication	*
Modulus	%
Negation	-
Subtraction	-

4. Type Conversion

Example Expression	Type	Value
(1 + 2 + 3 + 4)/4.0	float	2.5
“1234” + str(99)	String	“123499”
11 * 0.25	float	2.75
int(2.71828)	int	2
int(11) * 0.25	float	2.75
11 * int(0.25)	int	0
int(11 * 0.25)	int	2

5. Math Library Methods/Constants

Signature	Purpose	Return type
math.fabs(v)	Absolute value	float
math.cos(a)	Cosine of angle a in radians	float
math.pow(v, p)	v raised to the p power	float
math.pi	The constant for p	NA

6. Python functions

max(obj) = returns the largest of an iterable (string, list, tuple etc.).
min(obj) = returns the smallest of an iterable (string, list, tuple etc.).
len(obj) = returns the length of an iterable (string, list, tuple etc.).
sum() = sums the items of an iterable(list, tuple, etc.)

7. Lists

```
my_list = ["item1", "itme2", "item3"]
append() adds an element to a list
copy() returns a copy of the list
count() returns the number of items in a list
insert() adds an element at the specified position
remove() removes the first item in a list with specified value
reverse() reverses the order of the list
sort() sorts the list in ascending order
```

8. Input

Input command

```
d = float(input())
i = int(input())
s = str(input())
```

9. Output

```
print() Can be passed a float, int, or String
```

```
print(f"print this {variable:.2f}") Is passed a format string inside the {} with a format specifier
```

Example Specifier

Description

%d	Integer
%5d	Integer in a field of width 5
%f	Floating-point
%f5.2	Floating-point in a field of width 5 with 2 places to the right of the .
%s	String

Complete Example

```
12345678901234567890
print(f"{5:%2}{8:d%5.2f}") 5 8.10
print(f"{5:10d}{8.1:8.4f}") 5 8.1000
```