

Python 3 Cheatsheet: Math & Utilities

Math

```
divmod(8, 3)      # (2, 2) -> (quotient, remainder)
pow(a, b, m)      # (a ** b) % m
float('inf')       # Infinity
float('-inf')     # Neg Infinity
```

Random

```
import random
random.choice([1,2,3])
random.randint(0, 10)    # Inclusive
random.randrange(0, 10)  # Exclusive of stop
random.shuffle(lst)     # In-place shuffle
```

Bisect (Binary Search)

For sorted lists.

```
import bisect
arr = [1, 2, 4, 4, 6]
bisect.bisect_left(arr, 4)    # 2 (First insertion point)
bisect.bisect_right(arr, 4)   # 4 (Last insertion point)
bisect.insort(arr, 3)         # Insert maintaining order
```

Bitwise

```
a, b = 0b1100, 0b1010
a & b    # AND
a | b    # OR
a ^ b    # XOR
a >> 2   # Right Shift
a << 2   # Left Shift
```

Control Flow Tricks

For-Else Else runs only if loop completes without `break`.

```
for item in container:  
    if search(item):  
        break  
else:  
    print("Not found")
```

Ternary Operator

```
value = "A" if condition else "B"
```

Regex

```
import re  
re.sub('a|e|i|o|u', '', "apple") # "ppl"
```