**Cheatsheet**

**Basic Input/Output (iostream):**

* cout << (send output to console)
* cin >> (read input from console)
* endl (insert newline character)

**Character Functions (cctype):**

* toupper(ch) (convert character to uppercase)
* tolower(ch) (convert character to lowercase)
* isalnum(ch) (check if character is alphanumeric)
* isalpha(ch) (check if character is alphabetic)
* isdigit(ch) (check if character is a digit)
* isspace(ch) (check if character is whitespace)
* ispunct(ch) (check if character is punctuation)

**Math Functions (cmath):**

* sqrt(x) (square root)
* ceil(x) (ceiling function)
* floor(x) (floor function)
* pow(x, y) (x raised to the power of y)
* sin(x) (sine)
* cos(x) (cosine)
* tan(x) (tangent)
* exp(x) (exponential)
* log(x) (natural logarithm)
* log10(x) (base-10 logarithm)

**String Functions (string):**

* string str; (declare a string)
* str.length() (get string length)
* str[i] (access individual character)
* str.append(str2) (append another string)
* str.substr(i, len) (extract substring)
* str.find(ch) (find first occurrence of character)
* str.replace(i, len, str2) (replace substring)
* str.erase(i, len) (remove substring)
* str.clear() (clear the string)
* str.empty() (check if string is empty)

**Algorithm Functions (algorithm):**

* sort(vec.begin(), vec.end()) (sort elements)
* reverse(vec.begin(), vec.end()) (reverse order)
* find(vec.begin(), vec.end(), val) (find first occurrence of value)
* count(vec.begin(), vec.end(), val) (count occurrences of value)
* max\_element(vec.begin(), vec.end()) (find maximum element)
* min\_element(vec.begin(), vec.end()) (find minimum element)

**Numeric Functions (numeric):**

* abs(x) (absolute value)
* max(x, y) (maximum of two values)
* min(x, y) (minimum of two values)

**Random Functions (random):**

* srand(seed) (seed the random number generator)
* rand() (generate a random integer)

**Time Functions (ctime):**

* time(NULL) (get current time in seconds since epoch)
* localtime(&rawtime) (convert time to local time structure)
* strftime(buffer, ..., &local) (format time according to format string)

Remember that this is not an exhaustive list, and C++ offers a rich set of built-in libraries for various functionalities. Refer to C++ documentation or online resources for more comprehensive details.