

replace()

- Write algorithms change the elements in the range as they process them
- `replace()` changes all elements which have a given value to another value

// Replace all occurrences of 1 with 2

```
vector<int> vec{3, 1, 4, 1, 5, 9};  
replace(vec.begin(), vec.end(), 1, 2);
```

```
for (auto v = vec.begin(); v != vec.end(); ++v)    // Equivalent code  
    if (*v == 1)  
        *v = 2;
```

replace_if()

- `replace_if()` changes all elements for which a predicate returns true

```
// Replace all even numbers by 6
```

```
replace_if(vec.begin(), vec.end(),  
           [](int n) { return (n % 2 == 0); },  
           6);
```

```
for (auto v = vec.begin(); v != vec.end(); ++v)  
    if (*v % 2 == 0)  
        *v = 6;
```

```
// Equivalent code
```

for_each()

- for_each() calls a function on every element in the range

// Print each character in str on a separate line

```
string str{"A test string"};
for_each(str.begin(), str.end(),
        [](const char c) { cout << c << endl; }
);
```

// Traditional for loop

```
for (auto c = str.cbegin(); c != str.cend(); ++c)
    cout << *c << endl;
```

// Range for loop

```
for (auto c: str)
    cout << c << endl;
```