



1. Consider the following piece of incomplete pseudocode:

1 point

```
function Swap(vector, i, j)
    x ← vector[j]
    MISSING
    vector[i] ← x
    return vector
end function
```

This should implement the Swap function. What should go in the place of **MISSING**?

- $vector[i] \leftarrow vector[j]$
- $vector[j] \leftarrow vector[i]$

2. Consider the following piece of incomplete pseudocode:

1 point

```
function BubbleSort(vector)
    for  $1 \leq i \leq n - 1$  do
        count ← 0
        for  $1 \leq j \leq n - 1$  do
            if MISSING then
                Swap(vector, j, j + 1)
                count ← count + 1
            end if
        end for
        if count = 0 then
            break
        end if
    end for
    return vector
end function
```

This should implement the Bubble sort algorithm. What should go in the place of **MISSING**?

- $vector[j] < vector[j+1]$
- $vector[j-1] < vector[j]$
- $vector[j-1] < vector[j+1]$
- $vector[j+1] < vector[j]$

3. Consider the following sequence of vectors, where each vector is on a separate line:

1 point

5	1	2	2

1	5	2	2
1	2	2	5

In each line we should have the vector after the values have been swapped according to the Bubble Sort algorithm. What values should go in the third line?

- | | | | |
|---|---|---|---|
| 1 | 5 | 2 | 2 |
|---|---|---|---|
- | | | | |
|---|---|---|---|
| 5 | 1 | 2 | 2 |
|---|---|---|---|
- | | | | |
|---|---|---|---|
| 1 | 2 | 5 | 2 |
|---|---|---|---|

4. Consider the following sequence of vectors, where each vector is on a separate line:

1 point

5	1	4	1
1	5	4	1
1	4	5	1
1	4	1	5
1	1	4	5

In each line we have the vector after the values have been swapped according to the Bubble Sort algorithm. How many passes are there in this implementation of the Bubble Sort algorithm?

- 3
- 1
- 2

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