# CISC 3220 Homework Chapter 2

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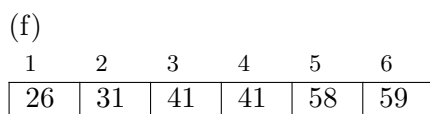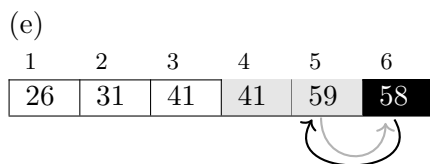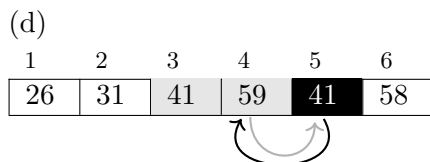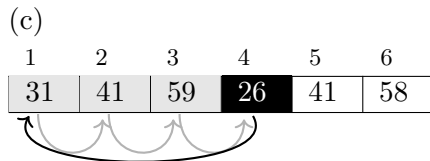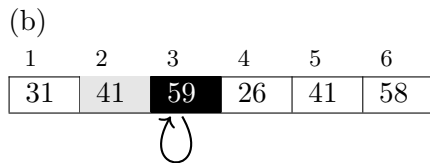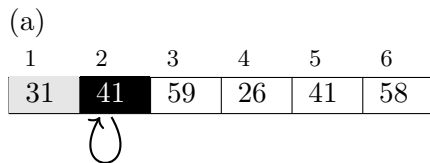
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## Exercises 2.1

### Question 2.1-1

Illustrate the operation of INSERTION-SORT on the array A = ⟨31; 41; 59; 26; 41; 58⟩.

(a)

| 1 | 2 | 3 | 4 | 5 | 6 |
|----|----|----|----|----|----|
| 31 | 41 | 59 | 26 | 41 | 58 |

(b)

| 1 | 2 | 3 | 4 | 5 | 6 |
|----|----|----|----|----|----|
| 31 | 41 | 59 | 26 | 41 | 58 |

(c)

| 1 | 2 | 3 | 4 | 5 | 6 |
|----|----|----|----|----|----|
| 31 | 41 | 59 | 26 | 41 | 58 |

(d)

| 1 | 2 | 3 | 4 | 5 | 6 |
|----|----|----|----|----|----|
| 26 | 31 | 41 | 59 | 41 | 58 |

(e)

| 1 | 2 | 3 | 4 | 5 | 6 |
|----|----|----|----|----|----|
| 26 | 31 | 41 | 41 | 59 | 58 |

(f)

| 1 | 2 | 3 | 4 | 5 | 6 |
|----|----|----|----|----|----|
| 26 | 31 | 41 | 41 | 58 | 59 |

## Question 2.1-2

Rewrite the INSERTION-SORT procedure to sort into nonincreasing order.

```
for j in range(1,len(array)):
    key = array[j]
    i = j-1
    while(i >= 0) and (array[i]<key):
        array[i+1] = array[i]
        array[i] = key
        i = i-1
```