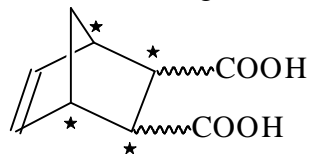***ANSWERS AND POINTS TO THEORETICAL PROBLEMS***
*(points are given in square brackets)*
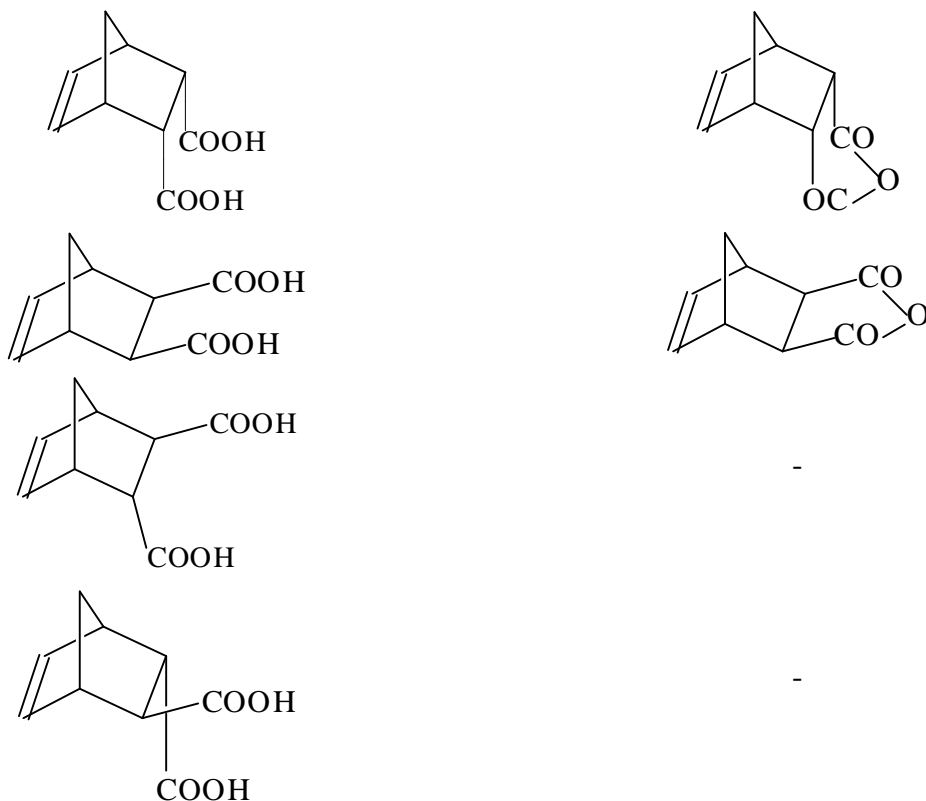
# PROBLEM 7.

1. *[1]* point for each correct atom, *[-1]* for each wrong choice. **Maximum value *[4]*.**
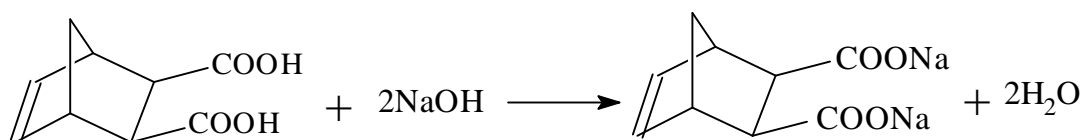


2. **Total *[6]*.**
Fill in the left column with the structures of stereoisomers of **X**, and the right column with the corresponding structures of dehydration products (when such structure does not exist write a minus sigh there). *[1]* point for each correct structure, *[-1]* point for incorrect structure.
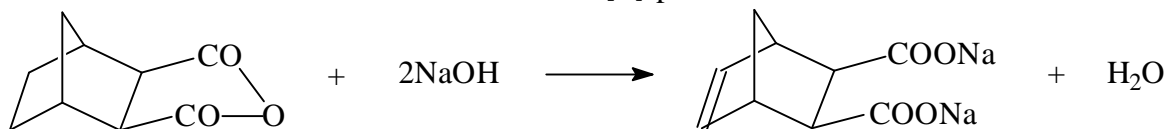


3. **Total *[2]*.**

The reaction of stereoisomer of **X** with NaOH - *[1]* point
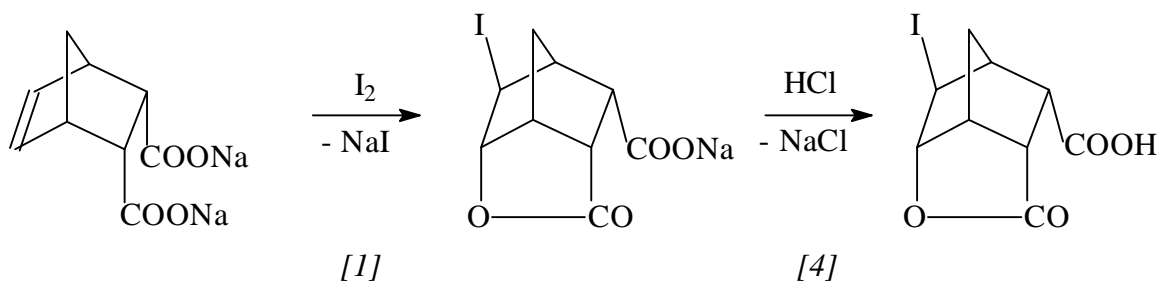
The reaction of stereoisomer of **Y** with alkali - *[1]* point

(structure) + 2NaOH → (structure) + H₂O

## 4. Total *[7]*.

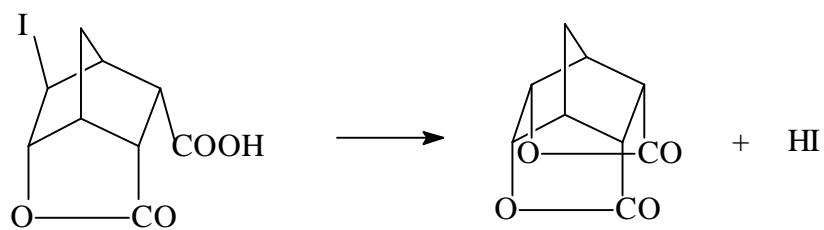| The molar mass of **A**, g/mol | 308<br>*[2]* | Calculations |
|---|---|---|
| | | |

*[1]* point will be given if right calculations are written, but wrong answer is obtained.
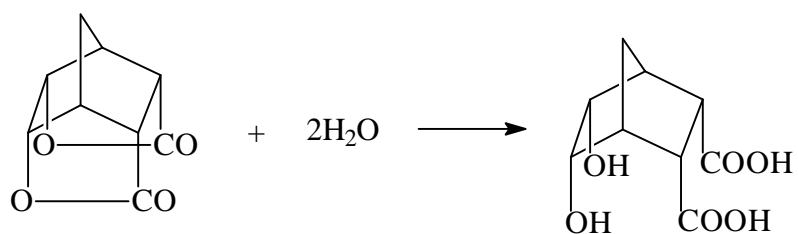The reactions leading from **X₁** to **A** - *[5]* points.

(structure with COONa, COONa) →I₂, − NaI→ (structure with I, COONa, O—CO) *[1]* →HCl, − NaCl→ (structure with I, COOH, O—CO) *[4]*

## 5. Total *[4]*.
The transformation of **A** to **C** - *[2]* points.

(structure with I, COOH, O—CO) → (structure with O—CO, O—CO) + HI

The reaction of **C** with water - *[2]* points.

(structure with O—CO, O—CO) + 2H₂O → (structure with OH, COOH, OH, COOH)
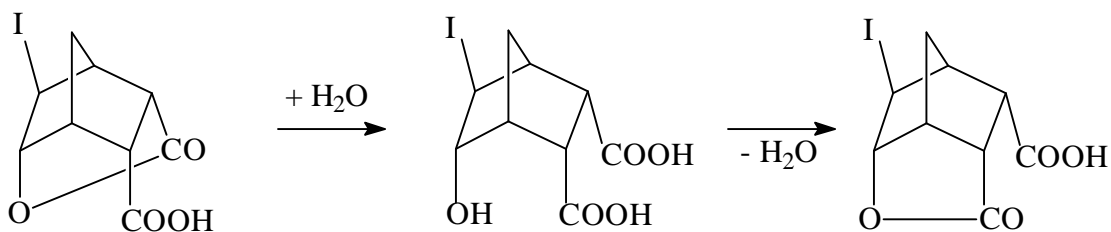
6. **Total** *[4].*
The structure of compound **X** - *[4]* points.
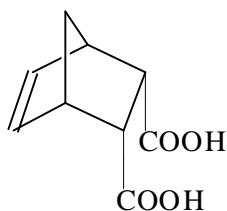


7. **Total** *[4].*
The transformation of **B** to **A** - *[4]* points.



8. **Total** *[1].*
Place a checkmark into the square near the correct statement
___ Yes, **A** and **B** are diastereomers
_V_ No, **A** and **B** are not diastereomers - *[1]* point