```python
inp_file = open("3jr_testdata.txt", "r")
in_list = []
for line in inp_file.readlines():
in_list.append(line[:len(line)].strip("\n"))
inp_file.close()

for element in inp_list:
    final = 
    bin1 = bin(int(element[0], 16)).lstrip("0b").zfill(4)
    bin2 = bin(int(element[1], 16)).lstrip("0b").zfill(4)
    diagram = []
    templist = []
    templist2 = []
    for i in range(len(bin1)):
        templist.append(bin1[i])
    for j in range(len(bin2)):
        templist2.append(bin2[j])
    diagram.append(templist)
    diagram.append(templist2)

# priority 1

if diagram[0] == ["1", "1", "1", "1"]:
    final = 
    diagram[0][0] = "0" and diagram[0][1] == "1":
    final = 
    diagram[1][1] = "0" and diagram[1][2] == "1":
    final = 
    diagram[0][2] = "0" and diagram[0][3] == "1":
    final = 
    diagram[1][2] = "0":

# priority 2

if diagram[0][0] == "1" and diagram[0][1] == "1" and diagram[0][3] == "1":
    final = 
    diagram[0][0] = "0":
    diagram[1][0] = "0":
    diagram[0][3] = "0":
    diagram[1][2] = "0":

# priority 3

if diagram[0][0] == "1" and diagram[0][1] == "1":
    final += "AB+"
    diagram[0][0] = "0":
    diagram[0][1] = "0":
else if (diagram[0][1] == "1" and diagram[0][2] == "1"): final += "BC+"
    diagram[0][1] = "0":
    diagram[0][2] = "0":
else if (diagram[0][2] == "1" and diagram[0][3] == "1"): final += "AB+"
    diagram[0][2] = "0":
    diagram[0][3] = "0":
else if (diagram[1][0] == "1" and diagram[1][1] == "1"): final += "A-B+"
    diagram[1][0] = "0":
    diagram[1][1] = "0":
else if (diagram[1][1] == "1" and diagram[1][2] == "1"): final += "AB+"
    diagram[1][1] = "0":
    diagram[1][2] = "0":
else if (diagram[1][2] == "1" and diagram[1][3] == "1"): final += "A-B+"
    diagram[1][2] = "0":
    diagram[1][3] = "0":
```

if diagram[0][0] == "1" and diagram[1][0] == "1":
    final = "A-C"
    diagram[0][0] = "0"
    diagram[1][0] = "0"
elif diagram[0][1] == "1" and diagram[1][1] == "1":
    final = "A-C"
    diagram[0][1] = "0"
    diagram[1][1] = "0"
elif diagram[0][2] == "1" and diagram[1][2] == "1":
    final = "A-C"
    diagram[0][2] = "0"
    diagram[1][2] = "0"
elif diagram[0][3] == "1" and diagram[1][3] == "1":
    final = "A-C"
    diagram[0][3] = "0"
    diagram[1][3] = "0"
## priority4
if diagram[0][0] == "1" and diagram[0][3] == "1":
    final = "B-C"
if diagram[1][0] == "1" and diagram[1][3] == "1":
    final = "B-C"
## priority5
if diagram[0][0] == "1" and test1[0] == "0" and (test0[0] == ["1", "0", "0", "0"] or test1[0] == ["0", "1", "0", "0"]) : 
    final = "ABC"
if diagram[0][1] == "1" and test1[1] == "0" and (test0[0] == ["1", "1", "0", "0"] or test1[0] == ["0", "0", "0", "0"]) : 
    final = "ABC"
if diagram[0][2] == "1" and test1[2] == "0" and (test0[0] == ["1", "0", "1", "0"] or test1[0] == ["1", "0", "0", "0"]) : 
    final = "ABC"
if diagram[0][3] == "1" and test1[3] == "0" and (test0[0] == ["1", "1", "1", "0"] or test1[0] == ["1", "1", "0", "0"]) : 
    final = "ABC"
if diagram[1][0] == "1" and test0[0] == "0" and (test1[0] == ["1", "0", "0", "0"] or test1[0] == ["1", "0", "1", "0"]) : 
    final = "ABC"
if diagram[1][1] == "1" and test0[1] == "0" and (test1[0] == ["1", "1", "0", "0"] or test1[0] == ["0", "1", "0", "0"]) : 
    final = "ABC"
if diagram[1][2] == "1" and test0[2] == "0" and (test1[0] == ["1", "0", "1", "0"] or test1[0] == ["1", "0", "0", "0"]) : 
    final = "ABC"
if diagram[1][3] == "1" and test0[3] == "0" and (test1[0] == ["1", "1", "1", "0"] or test1[0] == ["1", "1", "0", "0"]) : 
    final = "ABC"
## output
if final != "":
    if final[len(final)-1] == "~":
        final = final.strip("~")
print(final)