

โจทย์ข้อที่ 4

### Blood Types

When a person receives a blood transfusion, it is essential to make sure that the donor's blood type is compatible with the receiver's blood type. Receiving a blood type that is not compatible with your own can be life-threatening, so blood banks always make sure to note the type of blood they receive from donors so that they ...

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## Blood Types

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When a person receives a blood transfusion, it is essential to make sure that the donor's **blood type** is compatible with the receiver's blood type. Receiving a blood type that is not compatible with your own can be life-threatening, so blood banks always make sure to note the type of blood they receive from donors so that they can ensure a safe transfusion.

Blood types are named according to three factors: presence of **antigen A**, presence of **antigen B**, and presence of **Rh factor**. If antigen A is found, the blood type includes the letter **"A"**. If antigen B is found, the blood type includes the letter **"B"**. And if the Rh factor is present, the blood type ends with **"+"**"; otherwise, it ends with **"-"**. If neither antigen A nor antigen B are found, the blood type includes the letter **"O"**.

For example, a person with only antigen A would have the blood type **"A-"**. A person with both antigens A and B and the Rh factor would have blood type **"AB+"**, and a person with only the Rh factor would have blood type **"O+"**.

The rules for giving and receiving blood are as follows:

- A person with antigen A may only give blood to another person with antigen A.
- A person with antigen B may only give blood to another person with antigen B.
- A person with the Rh factor may only give blood to another person with the Rh factor.
- A person with none of the above factors (O-) can give blood to anyone.

Write a function that takes in a donor's and receiver's blood types as strings and returns whether or not the donor can safely give blood to the receiver, according to the rules above.

## Examples

```
canGiveBlood("O+", "A+") → true  
canGiveBlood("A-", "B-") → false  
canGiveBlood("A-", "AB+") → true
```

## Notes

- All letters are capital.
- Each blood type will be one of the following strings: "O+", "O-", "A+", "A-", "B+", "B-", "AB+", "AB-".

[SUGGEST EDIT](#)

ผู้รับ	ผู้ให้							
	O-	O+	A-	A+	B-	B+	AB-	AB+
O-	✓	✗	✗	✗	✗	✗	✗	✗
O+	✓	✓	✗	✗	✗	✗	✗	✗
A-	✓	✗	✓	✗	✗	✗	✗	✗
A+	✓	✓	✓	✓	✗	✗	✗	✗
B-	✓	✗	✗	✗	✓	✗	✗	✗
B+	✓	✓	✗	✗	✓	✓	✗	✗
AB-	✓	✗	✓	✗	✓	✗	✓	✗
AB+	✓	✓	✓	✓	✓	✓	✓	✓

## Code

assign > JS Blood\_Types.js > ...

```
1  function canGiveBlood(donor, receiver) {  
2    if(donor==receiver){  
3      return donor==receiver;  
4    }else if(donor == "O-"){  
5      return true;  
6    }else if(receiver=="AB+"){  
7      return true;  
8    }else if((receiver=="AB-")&&(donor.search("-")!=-1)){  
9      return true;  
10   }else if(receiver=="A+"&&(donor=="O+" || donor=="A-")){  
11     return true;  
12   }else if(receiver=="B+"&&(donor=="O+" || donor=="B-")){  
13     return true;  
14   }else{  
15     return false;  
16   }  
17  
18 }
```

```
21  
22 console.log(canGiveBlood("O+", "A+"))  
23 console.log(canGiveBlood("A-", "B-"))  
24 console.log(canGiveBlood("A-", "AB+"))  
25 console.log(canGiveBlood("AB-", "B-"))  
26 console.log(canGiveBlood("AB+", "A+"))  
27 console.log(canGiveBlood("O-", "A-"))  
28 console.log(canGiveBlood("A-", "O-"))  
29 console.log(canGiveBlood("O+", "AB-"))  
30 console.log(canGiveBlood("O-", "AB+"))  
31 console.log(canGiveBlood("AB+", "AB+"))  
32 console.log(canGiveBlood("O+", "O-"))  
33 console.log(canGiveBlood("O-", "AB-"))
```

Run

```
PS C:\Users\Admin\Desktop\JSpilot\JavaScript\assign> node .\Blood_Types.js
true
false
true
false
false
true
false
false
true
true
false
true
PS C:\Users\Admin\Desktop\JSpilot\JavaScript\assign> 
```