Avem următoarele variabile care vor fi folosite în toate problemele de mai jos:

```
a = 123.6
b = -14
c = ['23', True]
d = ['abcdefg', 1]
s = 'ABCDEFG'
lista = ["qwe", False, 234.0, 'GHJK', float('-inf'), -1]
```

1. Ce vor afișa expresiile următoare și de ce?

```
print(b >= a and d < c)
```
False, comparing the values -14 and 123.6, b is not greater or equal to a and the function stops as the and will not change an already False statement

```
print(b != a or 'abc' > s and len(s) == 4)
```
True, the program starts with the 'and', 'abc' is greater than s so it moves to len(s)==4 which is False, because of the 'and' the whole right part is False, then the program reads the left statement, b is indeed not equal to a, resulting in True, beacuse of the 'or' the whole statement is True

2. De ce e diferenta de rezultat între cele două expresii?

```
print(not (b >= a and d < c))
```
True

```
print(not b >= a and d < c)
```
False

in the first expression the whole brackets are evaluated together, since b != a the whole brackets are False, then "not" inverts the False to True. The second expression without brackets will be evaluated in the order written resulting in an inverted False (now True) "and" False, print(True and False) now results in False.

3. Care dintre expresiile de mai jos se executa cu succes și care returnează erori? Explicați rezultatele respectiv erorile acolo unde sunt.

✗ `8 / 2 * 'abc'` 'the result of 8 / 2 will be a float, 4.0, 'abc' is a str, floats cannot multiply str.

✓ `8 // 3 * [3, 'def']`

✗ `d >= s` a string cannot be compared to a list, as the string does not have enough values to compare against

✓ `[s] <= c`

✗ `s <= c` s is a string, not a list so cannot be compared against list variable c

✓ `s <= c[0]`

✗ `s <= c[2/2]` 2 / 2 results in float 1.0, this cannot be used to express a variable's position in a list

✗ `s <= c[6]` there is no position 6 in c's list

4. Care dintre expresiile de mai jos sunt adevărate și care false? Explicati.

`"GHJK" not in lista` False, "not" negates the True result as "GHJK" is in lista

`234 in lista` True, even though 234 is int and lista[2] is float, their inherent values can be equated and therefore the statement is True

`(a < b) in lista` True, (a < b) is False, the False bool appears in lista making the statement True

`lista[len(lista) - 1] * lista[2] > 0` False, the first part of the statement results in the length printed as integer 5, -1 makes 4, meaning lista[4] which is the float value -inf, and -inf is not greater than 0, making the statement False

5. De ce da eroare programul de mai jos?
Sugestie 1: folositi functia type() pentru determinarea tipului de date al variabilei n.
Sugestie 2: În consola din Pycharm rulati help(input) sa vedeți ce tip de date returnează aceasta functie.
Cum am putea rezolva să putem ridica la patrat fără eroare? Sugestie: convertiti variabila n la un intreg sau float.

```
n = input('Introdu un numar: ')
print('Numarul ridicat la patrat este: ', n ** 2)
```

The error states that a string cannot be raised to a square as the input generates a string value, for the program to print a float or integer, the value of n must be modified as below:

n = float(input('Introdu un numar:')) resulting in a float ** 2

or

n = int(input('Introdu un numar:')) resulting in a int ** 2