Lab 2.02 - Can I or Can't I

In your Notebook

Predict if each of the following examples will produce a `True` or `False` output. Check your answers in interactive mode.

Example 1

```
>>> a = 100
>>> b = "science"
>>> a > 75 and b == "science"
```

Predicted Output **Actual Output**

Example 2

```
>>> a = 100
>>> b = "science"
>>> a > 75 and b != "science"
```

Predicted Output **Actual Output**

Example 3

```
>>> a = 100
>>> b = "science"
>>> a > 75 or b != "science"
```

Predicted Output **Actual Output**

Example 4

```
>>> a = 100
>>> b = "science"
```

```
>>> c = True
>>> not c and a > 75 and b == "science"
```

Predicted Output **Actual Output**

In your Console

Complete the following coding challenge

1. Create a "Can I be President?" program, which determines if the user meets the minimum requirements for becoming the President of the United States. Have the user input the information needed.

   The minimum requirements to be president of the United States are:

   - Older than 35
   - Resident of US for 14 Years
   - Natural born citizen
   - Print `True` if the person could be president and `False` if they can't be president.

2. Create a "I can't be President?" program. Print `True` if the user cannot be President and `False` if they can be President.

3. Create a "Can I ride the roller coaster?" program. A roller coaster has the rule that a rider has to be over the height of 50 inches. Because of a legal loophole, if you are over the age of 18 you can ride regardless of your height. If you are allowed to ride, the coaster costs 4 quarters (although the operator accepts tips so more money is appreciated).

   - Also, the theme park sells frequent rider passes: with a frequent rider pass the roller coaster costs only 2 quarters. Ask the user how tall they are in inches, their age, how many quarters they have, and if they have a frequent rider pass. Print `True` if the person can ride and `False` if they can't.

Bonus

Are the following expressions equivalent? Research DeMorgan's Laws and write why you think they are the same or why they are not the same

`not(x or y) == not x and not y`

`not(x and y) == not x or not y`