

# 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 ```python >>> a = 100 >>> b = "science" >>> a > 75 and b == "science" ``` ### Example 2 ```python >>> a = 100 >>> b = "science" >>> a > 75 and b != "science" ``` ### Example 3 ```python >>> a = 100 >>> b = "science" >>> a > 75 or b != "science" ``` ### Example 4 ```python >>> a = 100 >>> b = "science" >>> c = True >>> not c and a > 75 and b == "science" ``` ## 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`