Topic: Conditions
CS 150 Introduction To CS
Python - Worksheet 04
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1) Evaluate each of the following expressions. Highlight the correct result.

(a) `(3 > 6 and 7 > 4)` True **False**

(b) `(4 > 6 or 10 < 2 * 6)` **True** False

(c) `(7 >= 3 + 4 or 6 < 4 and 2 < 5)` **True** False

(d) not `(5 <= 4 or 6 != 5 and 10 >= 4)` True **False**

2) Assume the variables and assignments below.

```
x = 5
y = 3
z = 2
a = True
b = False
```

Evaluate the following expressions.

(a) `(x - z == y)` **True** False

(b) `(x * z > z * y or b)` **True** False

(c) `(x * z < z * y and a)` True **False**

(d) `(x * z > z * y and a or b)` **True** False

(e) not `(x * z > z * y and a or b)` True **False**

3) Assume x and y are variables of type int. Translate each phrase into an equivalent boolean expression.

(a) `x` is less than 20 **x < 20**

(b) `x` is between 1 and 100 (inclusive) **x >= 1 and x <= 100**

(c) `y` is either 1 or 5 or 10 **y == 1 or y == 5 or y == 10**

(d) Both `x` and `y` are positive **x >= 1 and y >= 1**

(e) Neither `x` nor `y` is positive **not(x >= 1 or y >= 1)**

4) Circle the value stored in the `boolean` variable after the execution of each set of statements.

(a)
```
age = 30
isVoter = age <=18
```
True **False**

(b)
```
age = 16
isVoter = age <=18
```
True False

(c)
```
number = 11
evenNumber = number % 2 == 0
```
True **False**

(d)
```
number = 4
evenNumber = number % 2 == 0
```
True False

(e)
```
examScore = 60
validExamScore = examScore >= 0 and examScore <= 100
```
True False

(f)
```
examScore = 110
validExamScore = examScore >= 0 and examScore <= 100
```
True **False**