

Logic Worksheet—Boolean expressions

1. Evaluate to true or false when $x = 3$, $y = 5$
 - a. $x < y$
 - b. $x + 2 < y$
 - c. $x != y$
 - d. $x + 3 >= y$
 - e. $y == x$
 - f. $y == x + 2$
 - g. $!(x < y)$
 - h. $x < y \ \&\& \ y > 3$
 - i. $x > y \ \&\& \ y > 3$
 - j. $x < y \ || \ y > 3$
 - k. $x > y \ || \ y > 3$
2. Evaluate to true or false when we have declared
`string myState = "Wisconsin";`
`string yourState = "Minnesota";`
 - a. `myState == yourState`
 - b. `myState > yourState`
 - c. `myState == "Wisconsin"`
 - d. `myState < "wisconsin"`
3. Evaluate to true or false after the following code is executed
`int age = 20;`
`bool isSenior, hasFever;`
`double temperature = 102.0;`
 - a. `isSenior = (age >= 55);`
 - b. `hasFever = (temperature > 98.6);`
 - c. `isSenior && hasFever`
 - d. `isSenior || hasFever`
 - e. `!isSenior`
 - f. `!hasFever`
4. Write a boolean expression for the following (assume the variables were already declared)
 - a. taxRate is over 25% and income is less than \$20000
 - b. temperature is less than or equal to 75 or humidity is less than 70%
 - c. age is over 21 and age is less than 60
 - d. age is 21 or 22