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Skill 7.1 Exercise 1	
Evaluate whether each of the following is true or false for the conditions below, x = 11 and y = 5	
((x < 10) AND (y = 6))	
((x < 10) AND (y = 5))	
((x > 10) AND (y ≠ -3))	
((x < 10) OR (y = 5))	
((x > 10) OR (y = 5))	

Skill 7.2 Exercise 1	
Write each of the following expressions using proper java syntax	
((x < 10) AND (y = 6))	
((x < 10) AND (y = 5))	
((x > 10) AND (y ≠ -3))	
((x < 10) OR (y = 5))	
((x > 10) OR (y = 5))	

Skill 7.3 Exercise 1	
Indicate what is printed	
System.out.println(false && false);	
System.out.println(true && false);	
System.out.println(false true);	

Skill 7.4 Exercise 1	
Refer to the following code to evaluate what is printed. <pre>int x = 79, y = 46, z = -3; double d = 13.89, jj = 40.0; boolean b = true, c = false;</pre>	
System.out.println(true && !false);	
System.out.println(!b c);	

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System.out.println((jj == 40) && !false);	
System.out.println(x != 3);	
System.out.println(!(x != 3));	
System.out.println(c !(d > 0));	
System.out.println(!!true);	

Skill 7.5 Exercise 1

Declare and initialize an integer a.
Declare and initialize a different integer b.
Declare a boolean c.
Initialize c to !(a == b).
What is the value of c? True or false?

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Skill 7.6 Exercise 1

Refer to the following code to evaluate what is printed.

```
int x = 79, y = 46, z = -3;
double d = 13.89, jj = 40.0;
boolean b = true, c = false;
```

System.out.println(b && c !c);	
System.out.println(x == y && !(z < 0) b && c);	
System.out.println(x != y && y==z && b !c);	
System.out.println(x > y c b && jj%4 != 0);	

Skill 7.7 Exercise 1

Simplify the following

!(A > B B != A)	
! (A == B (B >= C B < A))	

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Skill 7.7 Exercise 2

Which of the following Boolean expressions are equivalent to the expression `num ≥ 15`?

Select two answers.

- ☐ A `(num > 15) AND (num = 15)`
- ☐ B `(num > 15) OR (num = 15)`
- ☐ C `NOT (num < 15)`
- ☐ D `NOT (num < 16)`

A **NAND** gate is a type of logic gate that produces an output of `false` only when both of its two inputs are `true`. Otherwise, the gate produces an output of `true`. Which of the following Boolean expressions correctly models a **NAND** gate with inputs `P` and `Q`?

- ☐ A `(NOT P) AND (NOT Q)`
- ☐ B `(NOT P) AND Q`
- ☐ C `NOT (P AND Q)`
- ☐ D `NOT (P OR Q)`

Skill 7.7 Exercise 3

The table below shows the value of an expression based on the values of `input1` and `input2`

Value of input1	Value of input2	Value of expression
true	true	false
true	false	true
false	true	true
false	false	true

Write an expression in terms of `input1` and `input2` that would produce the output.