

String Concatenation Operator (OCA Objective 3.1)

- ☐ If either operand is a String, the + operator concatenates the operands.
- ☐ If both operands are numeric, the + operator adds the operands.

Increment/Decrement Operators (OCA Objectives 3.1 and 3.2)

- ☐ Prefix operators (for example, ++x and --x) run before the value is used in the expression.
- ☐ Postfix operators (for example, x++ and x--) run after the value is used in the expression.
- ☐ In any expression, both operands are fully evaluated *before* the operator is applied.
- ☐ Variables marked final cannot be incremented or decremented.

Ternary (Conditional) Operator (OCA Objective 3.1)

- ☐ Returns one of two values based on whether its boolean expression is true or false.
- ☐ Returns the value after the ? if the expression is true.
- ☐ Returns the value after the : if the expression is false.

Logical Operators (OCA Objective 3.1)

- ☐ The exam covers six "logical" operators: &, |, ^, !, &&, and ||.
- ☐ Logical operators work with two expressions (except for !) that must resolve to boolean values.
- ☐ The && and & operators return true only if both operands are true.
- ☐ The || and | operators return true if either or both operands are true.
- ☐ The && and || operators are known as short-circuit operators.
- ☐ The && operator does not evaluate the right operand if the left operand is false.
- ☐ The || does not evaluate the right operand if the left operand is true.
- ☐ The & and | operators always evaluate both operands.
- ☐ The ^ operator (called the "logical XOR") returns true if exactly one operand is true.
- ☐ The ! operator (called the "inversion" operator) returns the opposite value of the boolean operand it precedes.

SELF TEST

1. Given:

```
class Hexy {  
    public static void main(String[] args) {  
        int i = 42;  
        String s = (i < 40) ? "life" : (i > 50) ? "universe" : "everything";  
        System.out.println(s);  
    }  
}
```

What is the result?

- A. null
- B. life
- C. universe
- D. everything
- E. Compilation fails
- F. An exception is thrown at runtime

2. Given:

```
public class Dog {  
    String name;  
    Dog(String s) { name = s; }  
    public static void main(String[] args) {  
        Dog d1 = new Dog("Boi");  
        Dog d2 = new Dog("Tyri");  
        System.out.print((d1 == d2) + " ");  
        Dog d3 = new Dog("Boi");  
        d2 = d1;  
        System.out.print((d1 == d2) + " ");  
        System.out.print((d1 == d3) + " ");  
    }  
}
```

What is the result?

- A. true true true
- B. true true false
- C. false true false
- D. false true true
- E. false false false
- F. An exception will be thrown at runtime