

Antwoorden Intermediate JavaScript Programming Techniques 2

Vraag 1 van 28

A user runs the following script:

```
var x = prompt("Enter an integer between 10 and 15");
    for (a = 1; a < x; a++) {
        if (a == 4)
            continue;
        else
            document.write(a);
    }
```

What will be the output on the screen, if the value entered by the user at the prompt is 10?

- A. 12356789
- B. 123456789
- C. 12345678910
- D. 1235678910

Antwoordtoets: A

Feedback:

The value of **x** becomes 10 after the user input. The value of **a** at the start of the **for** loop is 1. The **for** loop will iterate as long as the value of **a** is less than **x** (i.e., 1 to 9). As long as the condition in **if** evaluates to false, the **else** block will execute and display the current value of the **a** variable. On the 4th iteration of the loop, the condition for the **if** statement becomes **true** and the **if** block is executed. The **continue** statement skips the rest of the code in the **for** loop and continues with the next iteration. (Bron: <https://www.ciwcertified.com/>.)

Vraag 2 van 28

What will happen if the **break** statements in the following code block are replaced with the **continue** statements? (Assume that the value of **test** is 'C'.)

```
switch(test) {
    case 'A': alert("Excellent."); break;
    case 'B': alert("Good."); break;
    case 'C': alert("Average."); break;
    case 'D': alert("Below average."); break;
    default: ("Disqualified."); break;
}
```

- A. Only the "Average." alert message will be displayed.
- B. All the alert messages in the switch statements will be displayed.
- C. Three alert messages "Average.", "Below average.", and "Disqualified." will be displayed.
- D. SyntaxError.

Antwoordtoets: D

Feedback:

The given code block will display the **SyntaxError: Illegal continue statement: no surrounding iteration statement** message in the console window, because of the **continue** statement, which can be used in loops (or iteration statements). (Bron: <https://www.ciwcertified.com/>)

Vraag 3 van 28

Consider X and Z to be true and Y to be false, which of the following conditions will return false?

- A. X || Y
- B. Y && Z
- C. X && Z
- D. Y || Z

Antwoordtoets: B

Feedback:

The condition Y **&&** Z will return false, because the **AND** operator returns true only if both the operands are true. And, in this case, the operand Y is false. (Bron: <https://www.ciwcertified.com/>)

Vraag 4 van 28

Which of the following statements will execute only if the conditions A and B are true?

- A. if (A) && if (B)
- B. if (A || B)
- C. if (A) & if (B)
- D. if (A && B)

Antwoordtoets: D

Feedback:

The **&&** logical operator is used to combine expressions so that the entire expression returns true only if all the individual conditions in the expression are true. (Bron: <https://www.ciwcertified.com/>.)

Vraag 5 van 28

Which JavaScript statement should you use to repeat a group of statements for some particular range of values?

- A. for
- B. do...while
- C. continue
- D. if...else

Antwoordtoets: A

Feedback:

The **for** statement creates a loop that is executed as long as a condition is **true**. It will only stop when the condition becomes **false**. (Bron: <https://www.ciwcertified.com/>.)

Vraag 6 van 28

Which of the following statements is true of control structures?

- A. They make decisions based on Boolean values.
- B. They are exclusive to JavaScript.
- C. They are used in code to avoid program errors.
- D. They are methods that return at least one value.

Antwoordtoets: A

Feedback:

In programming, statements that make decisions based on Boolean values are referred to as control structures. Statements that cause code to execute repeatedly, or loop, are also control structures. For control structures that use Boolean values, generally, a comparison operator is used in the pertinent expression. (Bron: <https://www.ciwcertified.com/>.)

Vraag 7 van 28

Which of the following can be a substitute for the nested if-else statements?

- A. switch
- B. while
- C. for
- D. break

Antwoordtoets: A

Feedback:

The **switch** statements can be used to substitute a nested **if-else** block. The conditions that are being tested in the **if-else** block can be specified as a **case** in the **switch** block. (Bron: <https://www.ciwcertified.com/>.)

Vraag 8 van 28

What is the purpose of the switch statement?

- A. To compare a value against other values, to search for a match.
- B. To repeat a group of statements for some particular range of values.
- C. To exit a loop that would otherwise continue to execute.
- D. To force the flow of control back to the top of a loop.

Antwoordtoets: A

Feedback:

The **switch** statement compares a value against other values, to search for a match. If a match is found, then the code associated with the match will execute. The **break** statement is then used to exit the switch block of code. Essentially, the **switch** statement functions the same as multiple **if-else** clauses within an **if** statement. However, the **switch** statement is more readable and allows you to specify a default set of statements to execute if no match is found. (Bron: <https://www.ciwcertified.com/>.)

Vraag 9 van 28

Which of the following is true about the do-while statement?

- A. It executes only if the condition is true.
- B. It tests a condition prior to running a block of code.
- C. It can take an optional condition as an argument.
- D. It always executes at least once regardless of the condition.

Antwoordtoets: D

Feedback:

The **do-while** statement operates like the **while** statement, with one key difference. The **do-while** statement does not check the conditional expression until after the first time through the loop, guaranteeing that the code within the curly braces will execute at least once. A **do-while** loop can accomplish some tasks that the **while** loop cannot. The difference between the two control structures is that the **do-while** loop will execute its code at least one time, regardless of the Boolean value returned by the test condition. (Bron: <https://www.ciwcertified.com/>)

Vraag 10 van 28

Consider the following code:

```
for (X; Y; Z)
```

What does Y represent in this statement?

- A. The loop counter increment or decrement.
- B. The condition under which the loop will execute.
- C. The loop counter variable initialization expression.
- D. The highest value that the counter variable may reach.

Antwoordtoets: B

Feedback:

In the given statement **for (X; Y; Z)**, **Y** is the condition under which the loop will execute. **X** is the loop counter variable initialization expression. **Z** is the expression that increments or decrements the loop counter. (Bron: <https://www.ciwcertified.com/>)

Vraag 11 van 28

Consider the following code snippet:

```
var x = 100;
while (x > 5) {
    x--;
}
```

What will be the value of x after the execution of the given code snippet?

- A. 5
- B. 4
- C. 6
- D. 100

Antwoordtoets: A

Feedback:

The value of **x** after the execution of this code will be **5**. The condition under which the **while** statement executes is **x > 5**, so the last condition of the while loop will be executed when **x** has a value of **6**. Now, the code inside the while statement will execute for **x = 6**, which is greater than **5**, and the value of **x** will be decremented by **1** one more time making its value **5**. (Bron: <https://www.ciwcertified.com/>.)

Vraag 12 van 28

Consider the following code:

```
<script type="text/javascript">
var myPet= "rabbit";
switch (myPet) {
  case "Rabbit":
    document.write("My pet is a Rabbit.");
    break;
  case "Frog":
    document.write("My pet is a Frog.");
    break;
  default:
    document.write("I do not have a pet.");
}
</script>
```

What will be the output of the given code block?

- A. My pet is a Rabbit.
My pet is a Frog.
I do not have a pet.
- B. My pet is a Rabbit.
I do not have a pet.
- C. I do not have a pet.
- D. My pet is a Rabbit.

Antwoordtoets: C

Feedback:

JavaScript is a case-sensitive language. Thus, the **default** output (**I do not have a pet.**) will be the result because the variable **rabbit** did not match with the variable **Rabbit** due to the case of the letter 'R'. (Bron: <https://www.ciwcertified.com/>.)

Vraag 13 van 28

Which type of statement provides a way to exit a loop that would otherwise continue to execute?

- A. break
- B. while
- C. for
- D. continue

Antwoordtoets: A

Feedback:

A way to exit a loop that would otherwise continue to execute is to use the **break** statement. Usually, you will find the **break** keyword inside an if clause. If a certain condition is reached, the program will break out of the loop. If not, the loop will continue. You can use the **break** statement within the **for**, **while**, and **do...while** loops, as well as with the **switch** statement. (Bron: <https://www.ciwcertified.com/>.)

Vraag 14 van 28

What is the purpose of the break statement in JavaScript?

- A. To exit a control structure.
- B. To destroy unused variables.
- C. To terminate the current iteration and jump over the next iteration of the loop.
- D. To flush system memory.

Antwoordtoets: A

Feedback:

A way to exit a loop that would otherwise continue to execute is to use the **break** statement. Usually, you will find the **break** keyword inside the if clause. If a certain condition is reached, the program will break out of the loop. If not, the loop will continue. You can use the **break** statement within the **for**, **while** and **do...while** loops, as well as with the **switch** statement. (Bron: <https://www.ciwcertified.com/>.)

Vraag 15 van 28

Which of the following loops should you use if a loop must run at least once even if the condition is false?

- A. while
- B. for
- C. do...while

Antwoordtoets: C

Feedback:

The **do...while** statement creates a loop that executes a block of code once, before checking if the condition is true, then it will repeat the loop as long as the condition is **true**. The **do...while** statement is used to execute a loop at least once, no matter what. (Bron: <https://www.ciwcertified.com/>)

Vraag 16 van 28

Which JavaScript statement is used to force the flow of control back to the top of a loop?

- A. continue
- B. for
- C. while
- D. break

Antwoordtoets: A

Feedback:

The **continue** statement is used to force the flow of control back to the top of a loop. The **continue** statement can be considered as a "skip" or bypass command. When execution hits the **continue** statement, all statements between it and the end of the loop block are skipped, and execution returns to the top of the loop. The test condition for the loop is then evaluated to determine whether the loop should execute again. The **continue** statement can be used only within the **for** or the **while** loop. (Bron: <https://www.ciwcertified.com/>)

Vraag 17 van 28

Consider the following code:

```
<script type="text/javascript">
    var j = 0,
        i;
    for (i = 0; i < 10; i++) {
        document.write(i + " + ");
        j += i;
    }
    document.write("=" + j);
</script>
```

What is the output when this script is run in the browser?

- A. $0 + 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 = 45$
- B. $0 + 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 = 55$
- C. $0 + 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 = 0123456789$
- D. $0 + 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 = 012345678910$

Antwoordtoets: A

Feedback:

The loop executes 10 times and sums the numbers using **j**. An extra addition operator (+) appears because the **document.write()** method includes it after every number. It performs addition rather than concatenation because it recognizes the numbers are not strings. (Bron: <https://www.ciwcertified.com/>.)

Vraag 18 van 28

Consider the following while and do-while loops:

```
// while loop
    var x = 1;
    while (x > 0) {
        document.write("a");
        x--;
    }
// dowhile loop
    var x = 1;
    do {
        document.write("a");
        x--;
    } while (x > 0);
```

How many times will each of these loops run?

- A. while 1, do-while 2
- B. while 0, do-while 1
- C. while 1, do-while 1
- D. while 2, do-while 1

Antwoordtoets: C

Feedback:

After the first iteration of each of the loops, the condition in the **while** statement returns false, and the loop executes no further. This code counters a common myth among new developers that the number of iterations of the **do-while** loop is always one more than the **while** loop, for similar conditions. (Bron: <https://www.ciwcertified.com/>.)

Vraag 19 van 28

Which JavaScript statement should you use to test for a single condition and branch to a process?

- A. if
- B. while
- C. if...else
- D. for

Antwoordtoets: A

Feedback:

The **if** and **if...else** statements provide the ability to branch to one of two or more processes, depending on the result of some test condition that you have scripted. The **if** statement is used to test for a single condition. (Bron: <https://www.ciwcertified.com/>.)

Vraag 20 van 28

Consider the following code block:

```
if (test == 10) {  
    alert("Disqualified.");  
} else if (test == 25) {  
    alert("Passed with grace marks.");  
} else if (test == 40) {  
    alert("Passed.");  
} else if (test == 50) {  
    alert("Passed with honors.");  
} else {  
    alert("Inconclusive score.");  
}
```

Which statement is best suited to replace the given code block?

- A. while
- B. if statements without the else block
- C. for
- D. switch

Antwoordtoets: D

Feedback:

The **switch** statement is best suited to replace the given code of segment. **while** and **for** are looping statements, therefore they will not be of much help. The problem with **if** statements without the **else** block is the last alert "inconclusive score." If all other conditions fail, the **else** block must execute. Realizing this logic through **if** statements only will be inefficient. (Bron: <https://www.ciwcertified.com/>.)

Vraag 21 van 28

Consider the following code snippet:

```
if (example = 25) {  
    document.write("Correct answer.");  
} else {  
    document.write("Wrong answer.");  
}
```

Assuming the value of example is 10, what will be the output of the code snippet?

- A. Wrong answer.
- B. Syntax error.
- C. Correct answer.
- D. Blank screen, no output.

Antwoordtoets: C

Feedback:

In the **if** block, the test expression **example = 25** will always return **25**, because instead of the equality comparison operator (**==**), the assignment operator (**=**) is used. Now, the value of the test condition will always be evaluated as true, hence the **if** block will execute instead of the **else** block. (Bron: <https://www.ciwcertified.com/>)

Vraag 22 van 28

The continue statement can be used:

- A. within a for loop or a while loop.
- B. only within a for loop.
- C. only with a break statement.
- D. only with a for loop or a while loop.

Antwoordtoets: A

Feedback:

The **continue** statement can be used within the **for** loop or the **while** loop. It can also be used in the **switch** statements. (Bron: <https://www.ciwcertified.com/>)

Vraag 23 van 28

Which code will display an alert if the variable `timerMinutes` has a value 10?

- A. `if (timerMinutes == 10) alert("Time Expired!");`
- B. `if ("timerMinutes" = 10) {
 alert("Time Expired!");
}`
- C. `if ("timerMinutes" == 10); {
 alert("Time Expired!");
}`
- D. `if ("timerMinutes" = 10) alert("Time Expired!");`

Antwoordtoets: A

Feedback:

The correct code is given below:

```
if (timerMinutes == 10) alert("Time Expired!");
```

In a simple **if** statement for which no other test condition exists, the syntax is as follows:

```
if (expression) {  
    //statements to execute if the expression is true  
}
```

The expression (the test condition) is enclosed in parentheses. A set of curly braces encloses a block of a single statement or multiple statements. These statements will execute only if the expression returns the Boolean value of true. Nothing will happen if the Boolean expression returns a false value. If the code associated with a test condition consists of just one line, you can omit the curly braces. There should be no quotation marks around the variable named (**timerMinutes**). (Bron: <https://www.ciwcertified.com/>)

Vraag 24 van 28

Consider the following code:

```
<script type="text/javascript">  
    var day = "Thursday";  
    if(day < "Wednesday"){  
        window.alert("It's before today");  
    }  
    else{  
        window.alert("It's after today")  
    }  
</script>
```

What will the window alert box display when the script is run in the browser?

- A. It's after today
- B. It's before today
- C. Error will occur because you cannot perform a Boolean operation on a string.
- D. It's before today
It's after today

Antwoordtoets: B

Feedback:

In the given code, string comparison has to be done in the **if** statement for the values **"Thursday"** and **"Wednesday"**. In JavaScript, the script does not know or evaluate the day's placement in a week. It compares the values of the strings letter-by-letter and returns the value in the Boolean form. In this case, the string **Thursday** has the first letter as 'T' which is less than the letter 'W' of the string **Wednesday**, so the value **Thursday** is less than **Wednesday**. So, the operation evaluates to **true** and the script displays the output as **It's before today**. (Bron: <https://www.ciwcertified.com/>)

Vraag 25 van 28

Consider the following code:

```
<script type="text/javascript">
    var test = 100;
    if(test <= 6 && test >= 200 || test != 2) {
        window.alert("Good");
    }
    else{
        window.alert("Bad");
    }
</script>
```

What is the expected result when this script is run in the browser?

- A. The window alert box will display Bad.
- B. The window alert box will display Good.
- C. The window alert box will not appear because there is an error in the code.
- D. The window alert box will display Good, then the user clicks the OK button, it will display Bad.

Antwoordtoets: B

Feedback:

The code is well-formed, so the window alert box will appear and display **Good**. Because this script uses an **if/else** statement, only one alert box will appear. The value of **test (100)** is not equal to 2 (see the last condition after the **||** operator), so the entire expression evaluates to **true**. Thus, the Boolean evaluates to true so the value **Good** is displayed. (Bron: <https://www.ciwcertified.com/>)

Vraag 26 van 28

What is the purpose of the while statement?

- A. To execute a block of code for as long as a condition is true.
- B. To execute a block of code until a condition is true.
- C. To delay execution of a block of code until a condition is true.
- D. To delay execution of a block of code for as long as a condition is true.

Antwoordtoets: A

Feedback:

The **while** statement is used to execute a block of code as long as a certain test condition is **true**. When program execution reaches the **while** statement, the test condition is evaluated. If the expression returns the Boolean value of **true**, the statements encompassed within the curly braces are executed. Then, program flow returns to the beginning of the **while** statement, where the test condition is re-evaluated. The code block will repeat itself, or loop, for as long as the expression returns the value of **true**. The **while** loop is especially useful when it is uncertain for how many times the loop will need to execute. (Bron: <https://www.ciwcertified.com/>)

Vraag 27 van 28

Consider the following expression:

```
var num = "10";  
isNaN(num);
```

What value is returned by the isNaN() method?

- A. false
- B. true
- C. undefined
- D. null

Antwoordtoets: A

Feedback:

The **isNaN()** method returns true only if the argument passed to it is not a number. In the given expression **var num = "10"**, **num**, although it is a string, but in runtime, num is converted into a number because of implicit coercion (implicit type casting). Therefore, **isNaN()** returns false. (Bron: <https://www.ciwcertified.com/>.)

Vraag 28 van 28

What will be the output of the following code block?

```
for (a = 10; a > 0; a--) {  
    document.write(a + ", ");  
    if (a == 5) break;  
}
```

- A. 10, 9, 8, 7, 6,
- B. 10, 9, 8, 7, 6, 5,
- C. 10, 9, 8, 7, 6, 4, 3, 2, 1
- D. 10, 9, 8, 7, 6, 5, 4,

Antwoordtoets: B

Feedback:

The **for** block will execute as usual, displaying the value of **a** at each iteration. But at the sixth iteration, the condition inside the **if** statement will result true, and the **break;** statement will execute, causing the loop to end. (Bron: <https://www.ciwcertified.com/>.)