In an unguarded loop, the loop actions are always executed at least once.

true

| true | Loops are used to implement iteration in C++ |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 (FOR INT I = 1) | How many times is this loop entered? (That is, how many times is i printed?)+ for (int i = 1; i <= 10; i++) cout << i; cout << endl; |
| 11 (FOR INT I = 0) | How many times is this loop entered? (That is, how many times is i printed?)+ for (int i = 0; i <= 10; i++) cout << i; cout << endl; |
| condition expression | In the classic for loop, which portion of code is analogous to an if statement? |
| | |
| update expression | In the classic for loop, which portion of code is executed after the last statement in the loop body? |
| true | This idiomatic pattern is used to count from one value to another. for (int i = 1; i <= 10; i++) cout << i; cout << endl; |
| false (NOTICE ITS < INSTEAD OF <=) | This idiomatic pattern is used to count from one value to another. for (int i = 0; i < 10; i++) cout << i; cout << endl; |
| What must I change in the test to go to the next iteration? - advance the loop | match each item with the correct question below |
| Can my loop reach its bounds? - necessary bounds | |
| Has my loop reached its goal? - loop postcondition | |
| What makes this loop quit? - loop bounds | |
| What information is produced? - goal precondition | |
| What must I do to enter the loop? - bounds precondition | |
| Has my loop reached it's goal? - loop postcondition | |
| How is the data processed? - loop operations and actions | |
| Can my loop be entered at all? - loop guards | |
| What makes my loop quit? - loop bounds | |
| a loop guard | The highlighted sections below illustrates: If the variable str has any characters then (on line 3) |
| goal | Look at the problem statement below. The of the loop is to count the number of characters in a sentence. How many characters are in a sentence? Count the characters in a string until a period is encountered. If a string contains any characters, then it will contain a period. Count the period as well. |
| necessary condition | The highlighted section below illustrates: While more-characters (on line 8) |

| intentional condition | The highlighted section below illustrates: current-character not a period (on line 8) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loop postcondition | Below is the illustration from the loop building strategy. The highlighted lines represent: if current-character is a period then add one to the counter to account for the period else set the counter to -2 (lines 13-16) |
| bounds precondition | Below is the illustration from the loop building strategy. The highlighted lines represent: Create the variable current-character as a charater Place the first character in str into current-character (lines 5 and 6) |
| | |
| Actions that occur after the loop is complete - postcondition Actions occurring inside the loop's body - operation Actions that occur before the loop is encountered - precondition A test the determines if the loop should be entered - bounds | Match each item with the correct statement below. |
| for (auto e : s) if (x<3) else while (x<3) | Which of these is a flow-of-control statement? |
| for while | Which of these are guarded loops? |
| do-while | Which of these are unguarded loops? |
| loop bounds advancing the loop bounds precondition | Using the loop-building strategy from the lessons, which of these are part of the loop mechanics? |
| bounds | Look at the problem statement below. The of the loop is that a period was encountered. How many characters are in a sentence? Count the characters in a string until a period is encountered. If the string contains any characters, then it will contain a period. Count the period as well. |
| plan | Look at the problem statement below. The of the loop is read a character and increment a counter. How many characters are in a sentence? Count the characters in a string until a period is encountered. If the string contains any characters, then it will contain a period. Count the period as well. |
| sentinel bounds | Loop bounds used when searching through input. |
| limit bounds | Loop bounds often used in scientific and mathematical applications. |
| asymmetic bounds | In the classic for loop, loop control variables going from 0 to less-than n are said to employ: |
| | |

| data bounds | Loop bounds used when reading files or processing network data. |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 | How many times is this loop entered? (That is, how many times is i printed?) for (int i = 1; i < 10; i++) cout << i; cout << endl; |
| update expression | In the classic for loop, which portion of code is not followed by a semicolon? |
| update expression | In the classic for loop, which portion of code is executed after the last statement in the loop body? |
| condition expression | In the classic for loop, which portion of code is analogous to an if statement? |
| initialization statement | In the classic for loop, which portion is used to create the loop control variable? |
| goal recondition | Below is the illustration from the loop building strategy. The highlighted lines represent: |
| loop bounds | Below is the illustration from the loop building strategy. The highlighted lines represent: While more-characters and current-character not a period |
| an intentional condition | Below is the illustration from the loop building strategy. The highlighted lines represent: current-character not a period |
| goal operation | Below is the illustration from the loop building strategy. The highlighted lines represent: Add one to (or increment) the counter variable |
| | |
| | |
| advancing the loop | Below is the illustration from the loop building strategy. The highlighted lines represent Store the next character from str in current-character |
| advancing the loop true | |
| | Store the next character from str in current-character |
| true | Store the next character from str in current-character In a guarded loop, the loop actions may never be executed |
| true false | Store the next character from str in current-character In a guarded loop, the loop actions may never be executed In a guarded loop, the loop actions are always executed at least once |
| true false true | Store the next character from str in current-character In a guarded loop, the loop actions may never be executed In a guarded loop, the loop actions are always executed at least once In an unguarded loop, the loop actions are always executed at least once. |
| true false true false | Store the next character from str in current-character In a guarded loop, the loop actions may never be executed In a guarded loop, the loop actions are always executed at least once In an unguarded loop, the loop actions are always executed at least once. In an unguarded loop, the loop actions may never be executed. |
| true false true false true | Store the next character from str in current-character In a guarded loop, the loop actions may never be executed In a guarded loop, the loop actions are always executed at least once In an unguarded loop, the loop actions are always executed at least once. In an unguarded loop, the loop actions may never be executed. A guarded loop is also known as a test-at-the-top loop |
| true false true true false false true | Store the next character from str in current-character In a guarded loop, the loop actions may never be executed In a guarded loop, the loop actions are always executed at least once In an unguarded loop, the loop actions are always executed at least once. In an unguarded loop, the loop actions may never be executed. A guarded loop is also known as a test-at-the-top loop A guarded loop is also known as a test-at-the-bottom loop. |
| true false true false true true | Store the next character from str in current-character In a guarded loop, the loop actions may never be executed In a guarded loop, the loop actions are always executed at least once In an unguarded loop, the loop actions are always executed at least once. In an unguarded loop, the loop actions may never be executed. A guarded loop is also known as a test-at-the-top loop A guarded loop is also known as a test-at-the-bottom loop. An unguarded loop is also known as a test-at-the-bottom loop. |
| true false true false true false true false true | Store the next character from str in current-character In a guarded loop, the loop actions may never be executed In a guarded loop, the loop actions are always executed at least once In an unguarded loop, the loop actions are always executed at least once. In an unguarded loop, the loop actions may never be executed. A guarded loop is also known as a test-at-the-top loop A guarded loop is also known as a test-at-the-bottom loop. An unguarded loop is also known as a test-at-the-bottom loop. An unguarded loop is also known as a test-at-the-top loop. |

| true (notice = sign) | This idiomatic pattern is used to count from one value to another. for (int i = 1; i <= 10; i++) cout << i; cout << endl; |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| false (notice lack of = sign) | This idiomatic pattern is used to count from one value to another. for (int i = 1; i < 10; i++) cout << i; cout << endl; |
| true (notice lack of = sign) | This loop uses asymmetric bounds. for (int i = 0; i < 10; i++) cout << i; cout << endl; |
| true (notice lack of = sign) | This loop uses asymmetric bounds. for (int i = 1; i < 10; i++) cout << i; cout << endl; |
| false (notice equal sign) | This loop uses asymmetric bounds. for (int i = 1; i <= 10; i++) cout << i; cout << endl; |
| cat < alice.txt wc - 1 wc - 1 < alice.txt | Which command counts the number of lines (only) in alice.txt? |
| ./prt < x.data (INCORRECT) | Which line runs the prt program and stores its output in a new file named x.data? |
| true | Ignore unwanted error messages by redirecting the error stream to /dev/null |
| true | cat < a.txt > b.txt erases the contents of b.txt before writing to it. |
| false | This command: cat < nofile 2> /dev/null will print an error message on the screen if nofile does not exist. |
| true | cat < a.txt > b.txt makes a copy of a.txt in the file b.txt |
| Incorrect answer: ./a.out < out.txt >> in.txt | Which line runs a.out getting its input from in.txt and appending its output to the file out.txt? |
| true | The operating system stream stderr is connected to your monitor by default. |
| false | When using cat with redirection, the program only stops running when you press Control+D. |
| true | At the lowest level, all input and output is a stream of bytes flowing through your program. |
| true | cat < a.txt > b.txt makes a copy of a.txt in the file b.txt |
| ./dmm >> x.data | Which line runs the dmm program and adds its output to a file named x.data? |
| true | Pipes redirect the output of one program to be the input to another program. |
| true | Programs that process streams of characters are called text filters. |
| false | The Unix filter used to read and display output is named type |
| Write output to a new file named z - pwd > z Write errors to a new file named z - cat x2>z Append output to a file named z - pwd >> z Send the output to the input of the program named z - date I z | Match each redirection symbol with the description below.Each line starts with a built-in command |

| ./prt > x.data | Which line runs the prt program and stores its output in a new file named x.data? |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Send the output to the input of the program named z - date I z Read the input from the file named z - cat < z Discard both output and errors - rm x > /dev/null 2>&1 Write errors to a new file named z - catx2>z | Match each redirection symbol with the description below.Each line starts with a built-in command |
| "hel*lo" | What is the value of r("hello")? string r(const string& s) { if (s.size() > 1) {string t = s[0] == s[1] ? "*" : ""; return s[0] + t +r(s.substr(1));} return s; } |