## Midterm 2 Study Guide

Due No due date

Points 25

**Questions** 25

Time Limit 30 Minutes

Allowed Attempts Unlimited

## Take the Quiz Again

## **Attempt History**

	Attempt	Time	Score
KEPT	Attempt 11	29 minutes	25 out of 25
LATEST	Attempt 12	30 minutes	22 out of 25
	Attempt 11	29 minutes	25 out of 25
	Attempt 10	30 minutes	20.17 out of 25
	Attempt 9	29 minutes	20 out of 25
	Attempt 8	29 minutes	20.5 out of 25
	Attempt 7	28 minutes	21 out of 25
	Attempt 6	24 minutes	21 out of 25
	Attempt 5	20 minutes	17.83 out of 25
	Attempt 4	30 minutes	17.67 out of 25
	Attempt 3	22 minutes	16 out of 25
	Attempt 2	16 minutes	16.17 out of 25
	Attempt 1	30 minutes	18.33 out of 25

① Correct answers are hidden.

Submitted Jun 28 at 1:46pm

Question 1	1 / 1 pts
An <i>unguarded</i> loop is also known as a <i>test-at-the-bottom</i> loop.	
True	
O False	

Question 2	1 / 1 pts
Below is the illustration from the loop building strategy. The <i>highlighted lines</i> represent:	
Given: the variable str is a string (may be empty)  Create the counter variable, initialized to -1  If the variable str has any characters then	
{ Set counter to 0 Create the variable current-character as a character	
Place the first character in str into current-character  While more-characters and current-character not a period  {  Add one to (or increment) the counter variable  Store the next character from str in current-character	
} If current-character is a period then Add one to the counter to account for the period. Else	
Set counter to -2 } If counter is -1 the string was empty Else if counter is -2 there was no period	
O loop postcondition	
O goal precondition	
advancing the loop	
O bounds precondition	



Question 3		1 / 1 pts
Match each item with the correct question below.		
What must I change in the test to go to the next iteration?	advance the loop ~	
What must I do to enter the loop?	bounds precondition ~	
Has my loop reached its goal?	loop postcondition ~	
Can my loop be entered at all?	loop guards v	

Question 4	1 / 1 pts
Below is the illustration from the loop building strategy. The <i>highlighted lines</i> represent:	
Given: the variable str is a string (may be empty) Create the counter variable, initialized to -1 If the variable str has any characters then { Set counter to 0 Create the variable current-character as a character Place the first character in str into current-character While more-characters and current-character not a period { Add one to (or increment) the counter variable Store the next character from str in current-character } If current-character is a period then Add one to the counter to account for the period. Else Set counter to -2 } If counter is -1 the string was empty Else if counter is -2 there was no period	
O loop bounds	
O loop postcondition	
O goal operation	
advancing the loop	
bounds precondition	
<ul> <li>goal precondition</li> </ul>	

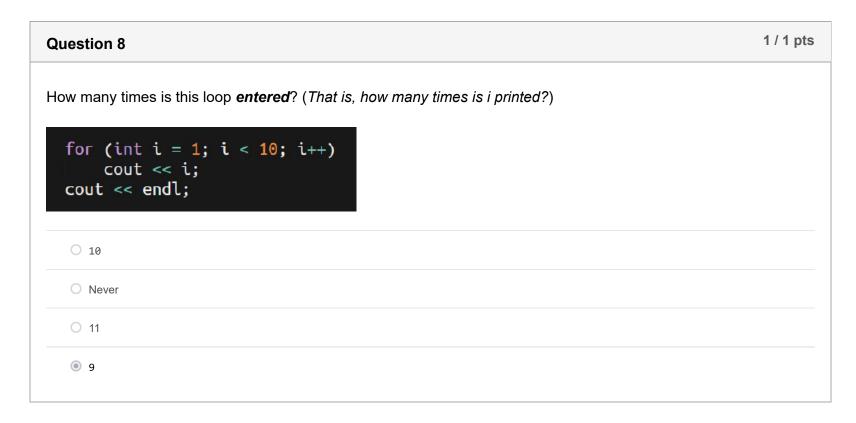
Question 5			1 / 1 pts
Match each item with the correct statement below.			
Keeps processing input until a particular value is found in input.	sentinel loop	~	
Keeps processing until the output gets no closer to the answer.	limit loop	~	





Question 6	1 / 1 pts
Loops are used to implement selection in C++.	
O True	
False	

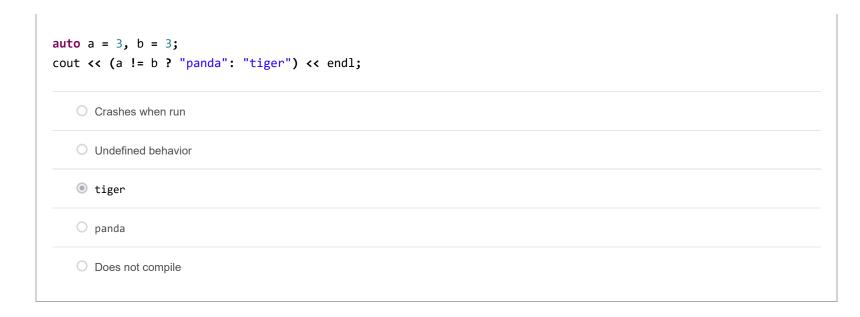
Question 7	1 / 1 pts
In a <i>guarded</i> loop, the loop actions are always executed at least once.	
O True	
False	



Question 9	1 / 1 pts
In the classic <i>for</i> loop, loop control variables going from 0 to less-than n are said to employ:	
O None of these	
asymmetric bounds	
symmetric bound	
necessary bounds	
O intentional bounds	

Question 10	1 / 1 pts
What prints here?	





Question 11	1 / 1 pts
A while loop is a hasty or unguarded loop.	
O True	
False	

Question 12	1 / 1 pts
Given the <b>overloaded</b> functions prototypes and the variable definition below, which of the function calls with compile?	ll fail to
<pre>int f(int&amp;); int f(int); int f(int, int); int a = 7;</pre>	
√ f(a);	
☐ f(2.0);	
☐ f(3)	
☐ f('a', 'b')	
□ None of these fail to compile	

Question 13	1 / 1 pts
What kind of error is this?  Segmentation fault	
Runtime error (throws exception when running)	
Type error (wrong initialization or assignment)	
Syntax error (mistake in grammar)	
Linker error (something is missing when linking)	
Compiler error (something is missing when compiling)	
Operating system signal or trap	
O None of these	



_		
Incorrect	Question 15	0 / 1 pts
	Assume that the input is 4 4 3 2 5. What will print?	
	<pre>int i = 1;</pre>	
	do	
	{	
	int n;	
	cin >> n;	
	i++;	
	}	
	while (n % 2);	
	cout << i << endl;	
	O 4	
	O infinite loop	
	O Does not compile	
	O 3	

Question 16	1 / 1 pts
Default arguments allow you to write several different functions that have the same name.	
O True	
False	

Question 17	1 / 1 pts
Which of these are <i>dependencies</i> ?	
<pre>EXE=digit-tester OBJS=client.o digits.o \$(EXE): \$(OBJS)     \$(CXX) \$(CXXFLAGS) \$(OBJS) -o \$(EXE)</pre>	
☑ digits.o	
□ \$(EXE)	
☐ digit-tester	



mystery3 is an implementation of the Factorial algorithm. It completes for all inputs, but negative inputs produce the wrong output. It is efficient and it is not a wrapper. if (n < 2) is a base case.

```
1 / 1 pts
Question 19
What is the value of r("xhixhix")?
string r(const string& s)
    if (s.size()) {
        auto c = s.at(0);
        auto t = c == 'x' ? 'y' : c;
        return t + r(s.substr(1));
   }
    return 0;
}
   yhiyhiy
   xyyxyyx
   О ууууууу

    Stack overflow

    xyhixyhixy
```

```
What does this function do?

int mystery(int n)
{
  if (n == 1) return 1;
  return n + mystery(n-1);
}
Computes the Gauss series (sum) of 1..n
```



Incorrect



Question 21	1 / 1 pts
One remarkably simple formula for calculating the value of $\pi$ is the so-called Madhava–Leibniz series: $\frac{\pi}{4} = 1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \dots$ Consider the recursive function below to calculate this formula:  double computePI(int number) {     if (number <= 1) { return 1.0;}     int oddnum = 2 * number - 1;     return computesign(number) * 1.0 / oddnum         + computePI(number - 1);	=
}	
In this recursive function, what is the recursive base case?	
When the parameter variable is greater than one	
When the value that is returned from the function is zero	
When the parameter variable is zero	
When the parameter variable is less than or equal to one	

When using the get() member function to read a character, leading whitespace is not skipped.

True

False

```
Which line opens the file in.txt for reading?

None of these
ofstream in; in.open("in.txt");
istream in("in.txt");
ifstream open("in.txt");
```

```
Question 24

What is the value of r("axxbxx")?

string r(const\ string\&\ s)
{
```



if	<pre>ito front = s.substr(0, 1); f (front.empty()) return ""; eturn (front == "x" ? "" : front) + r(s.substr(1));</pre>	
•	"ab"	
0	"ax bx "	
0	"a b "	
0	Stack overflow	
0	"xxxx"	

Question 25	1 / 1 pts
When using the get() member function, a stream will fail only if there are no characters left in the input s	tream.
True	
O False	

