## Midterm 2 Study Guide

**Due** No due date **Questions** 25 **Allowed Attempts** Unlimited Points 25 **Time Limit** 30 Minutes

## Take the Quiz Again

## **Attempt History**

	Attempt	Time	Score
KEPT	Attempt 11	29 minutes	25 out of 25
LATEST	Attempt 18	30 minutes	23 out of 25
	Attempt 17	19 minutes	24 out of 25
	Attempt 16	21 minutes	24 out of 25
	Attempt 15	30 minutes	23 out of 25
	Attempt 14	22 minutes	24 out of 25
	Attempt 13	25 minutes	24 out of 25
	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 29 at 3:57pm



1 / 1 pts **Question 2** 

The highlighted section below illustrates. current-character not a period: 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. Set counter to -2 If counter is -1 the string was empty Else if counter is -2 there was no period None of these a boundary condition a loop guard a postcondition a necessary condition an intentional condition

Question 3 1 / 1 pts

Below is the illustration from the loop building strategy. The *highlighted lines* represent. Set counter to 0:

```
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.
      Set counter to -2
If counter is -1 the string was empty
Else if counter is -2 there was no period
bounds precondition
advancing the loop
```

O loop bounds

O goal operation			
<ul><li>goal precondition</li></ul>			
O loop postcondition			

Question 4	1 / 1 pts
Loop bounds used when reading files or processing network data.	
O limit bounds	
O None of these	
<ul><li>data bounds</li></ul>	
<ul> <li>sentinel bounds</li> </ul>	

Question 5	1 / 1 pts
Loop bounds often used in scientific and mathematical applications.	
O data bounds	
limit bounds	
<ul> <li>sentinel bounds</li> </ul>	
O None of these	

Question 6	1 / 1 pts
Which of these are <i>guarded</i> loops?	
☐ do-while	
✓ for	
□ if	
☐ if-else	
☑ while	

Question 7	1 / 1 pts



hich of these are indefinite loops?		
<b>✓</b> ;	sentinel loops	
✓ I	limit loops	
<b>~</b>	data loops	
	counter controlled loops	

Question 8	1 / 1 pts
Which are the two major categories of loops?	
✓ definite loops	
☐ infinite loops	
✓ indefinite loops	
☐ data loops	
sentinel loops	
☐ limit loops	

Question 9	1 / 1 pts
In the classic <i>for</i> loop, which portion of code is not followed by a semicolon?	
O None of these	
O condition expression	
O initialization statement	
<ul><li>update expression</li></ul>	

Question 10 1/1	pts
Default arguments may only be used with value parameters.	
True	
O False	



Question 11	1 / 1 pts
Arguments passed to a function that has a non-constant reference parameter mus	t be:
O reference arguments	
O rvalues	
either Ivalues or rvalues are fine	
Ivalues	
O constants	



## An *undefined* error message is a compiler error. True False

```
A do-while loop is also called a hasty loop.

True

False
```

```
What prints here?

double a = 1;
switch (a)
{
    case 1: cout << "1";
    case 2: cout << "2";
}
cout << endl;

12

O Undefined behavior

1
```

```
What prints here?

int i = 5;
while (--i) cout << i;
cout << endl;

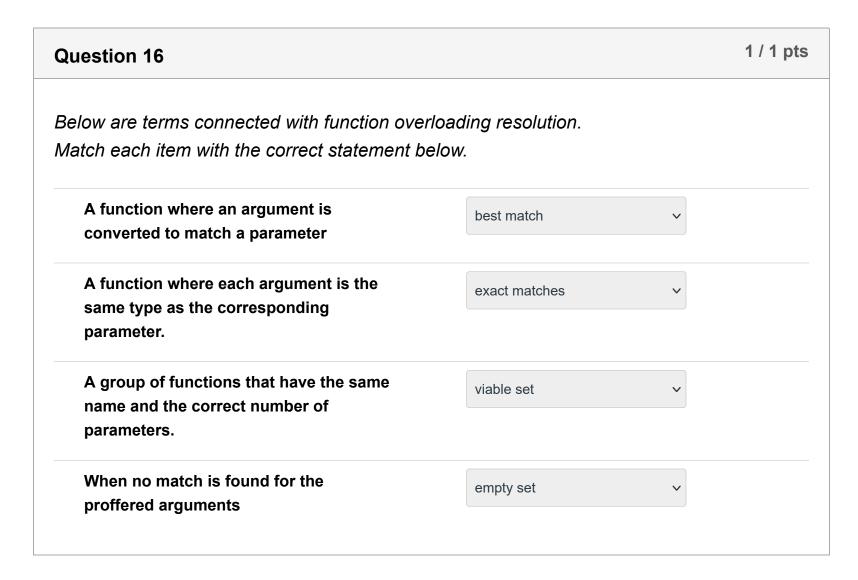
Infinite loop

54321

43210

Syntax error: --i is not a Boolean expression

4321
```



```
Question 17

What is the output of the following?

int i = 0;
while (i != 11)
{
```



```
cout << i << " ";
    i = i + 2;
}

O 10 12 14 16 18 .... (infinite loop)

O 2 4 6 8

O 2 4 6 8 10 12 14 .... (infinite loop)

No output
```

```
Which command finds the word "order" in the file input.txt?

| grep "order" | input.txt
| cat < input.txt | grep "order"
| None of these
| grep "order" > input.txt
| grep 'order" > input.txt
| find "order" < input.txt
```

```
This loop:

string str;
while (getline(in, str))
{
    cout << str << endl;
}

illustrates token-based stream processing

illustrates line-based stream processing

has a syntax error

is an endless loop

illustrates raw character I/O
```

Question 20 1 / 1 pts



./a.out < :	n.txt > out.txt 2> err.txt
○ ./a.out < :	n.txt 2>&1 out.txt >> err.txt
O ./a.out > :	n.txt < out.txt 2> err.txt
O ./a.out >>	in.txt > out.txt 2> err.txt
O None of the	ese
○ ./a.out < :	n.txt > out.txt 2>&1 err.txt

Question 21 1 / 1 pts

In 1735 Leonard Euler proved a remarkable result, which was the solution to the *Basel Problem*, first posed in 1644 by Pietro Mengoli. This result gave a simple expression for  $\pi$ . The formula states that  $\frac{\pi^2}{6}$  is equal to the limit, as n goes to infinity, of the series  $\frac{1}{1} + \frac{1}{2^2} + \frac{1}{3^2} + ... + \frac{1}{n^2}$ . Can this series be computed recursively?

- No, because the base case is not zero
- Yes, but the code will be very long
- Yes
- O No, because there is no base case

O Gets stuck in an endless loop

What does this code do?

ifstream in("temp.txt");
string x;
int i{0};
while (getline(in, x)) i++;
cout << i << endl;

Counts the number of digits in the file

Counts the number of characters in the file

Counts the number of words in the file

```
What does this function do?

int mystery(int n)
{
  if (n < 2) return 1;
  return mystery(n-1) + mystery(n-2);
}

Produces a stack overflow

Computes the Gauss series (sum) of 1..n

Computes the Factorial number n

Computes the Fibonacci number n

Computes the reverse of the input n
```

Question 24	1 / 1 pts
A filter program, like cat, is designed to be run interactively from the terminal.	
O True	
False	

Question 25	1 / 1 pts
When using the get() member function to read a character, leading whitespace i	is skipped.
O True	
False	

