Midterm 2 Study Guide

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

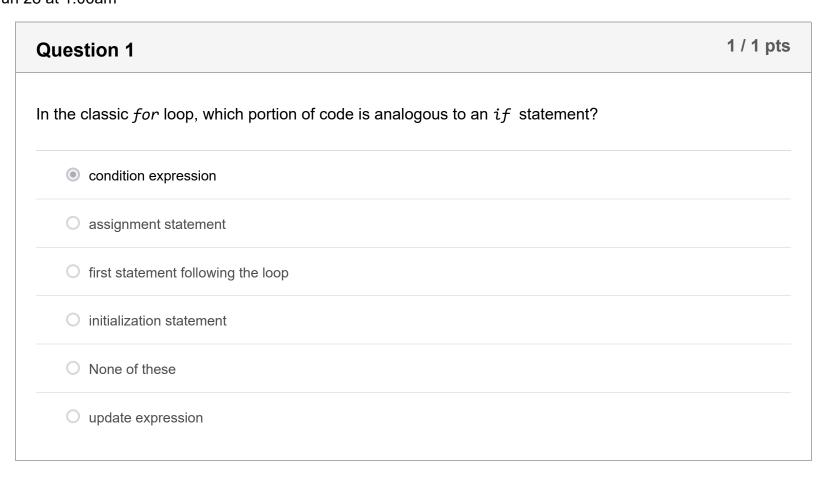
Take the Quiz Again

Attempt History

	Attempt	Time	Score
KEPT	Attempt 7	28 minutes	21 out of 25
LATEST	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

(!) Correct answers are hidden.

Submitted Jun 28 at 1:06am



Incorrect	Question 2				
	The highlighted section below illustrates. While more-characters:				

```
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
a necessary condition

    an intentional condition

a postcondition
a loop guard
a boundary condition
None of these
```

Incorrect

Question 3

O loop bounds

goal precondition

0 / 1 pts

Below is the illustration from the loop building strategy. The *highlighted lines* represent. If current-character is a period then:

```
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
O loop postcondition
bounds precondition
advancing the loop
```

goal operation	
----------------	--

Question 4	1 / 1 pts
Loop bounds used when searching through input.	
sentinel bounds	
O limit bounds	
O None of these	
O data bounds	

Question 5	1 / 1 pts
Below is the illustration from the loop building strategy. The <i>highlighted lines</i> represset counter to 0:	sent.
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 bounds precondition	
advancing the loop	
goal precondition	
O goal operation	
O loop postcondition	

Question 6 1 / 1 pts

Using the loop-building strategy from the lessons, which of these are part of the *loop*



mechanics?			
loop bounds			
post condition			
advancing the loop			
goal precondition			
goal operation			
bounds precondition	I		

Incorrect	Question 7	0 / 1 pts
	What prints?	
	<pre>string str = "Hello"; for (auto i = 0, len = str.size(); i < len; i++) cout << str.at(i);</pre>	
	O Does not compile	
	● Hello	
	O Crashes when run	
	O Undefined behavior	
	O Hell	

Incorrect	Question 8	0 / 1 pts
	An <i>unguarded</i> loop is also known as a <i>test-at-the-bottom</i> loop.	
	O True	
	False	

Question 9

Below is the illustration from the loop building strategy. The <i>highlighted lines</i> represented one to (or increment) the counter variable:	∍nt.

1 / 1 pts

```
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
advancing the loop
loop postcondition
O loop bounds
goal precondition
goal operation
bounds precondition
```

```
What prints here?

auto a = 3, b = 3;
cout << (a != b ? "panda": "tiger") << endl;

panda

Undefined behavior

Does not compile

Crashes when run

tiger
```

```
Question 11

What prints here?

auto a = 1;
switch (a)
{
    case 1: cout << "1";
    case 2: cout << "2";</pre>
```



} cout << en	dl ;			
O 2				
0 1				
12				
O Does	not compile			
O Under	ined behavior			

Question 12	1 / 1 pts
Default arguments appear only in the function implementation.	
O True	
False	

Question 13	1 / 1 pts
Examine this code. Which is the best prototype?	
<pre>int age; string name = read("Enter your name, age: ", age);</pre>	
<pre>string read(const string&, int&)</pre>	
<pre>o string read(const string&, int)</pre>	
<pre>O string read(const string, int&)</pre>	
<pre>String read(string, int);</pre>	
O None of these	

Question 14	1 / 1 pts
In a library, the <i>implementation</i> file:	
o consists of function definitions	
O consists of function calls	
O consists of instructions that produce the executable	



0	consists of declarations or prototypes	
0	None of these	

Question 15	1 pts
An incomplete, yet compilable, linkable and executable function is called a	_ ?
O None of these	
stub	
O declaration	
O prototype	

Question 16	1 / 1 pts
Different functions that have the same name, but take different arguments, are sa	aid to be:
overloaded	
Overridden	
O default	
O covariant	
Oderived	

Question 17	1 / 1 pts
Which of these documentation tags are used in a <i>file comment?</i>	
<pre>@param</pre>	
□ @code	
☑ @file	
✓ @date	

Question 18	1 / 1 pts



```
int mystery3(int n) {
    if (n < 2) return 1;
    return n * mystery3(n - 1);
}

mystery3 has a stack overflow for some
numbers.

mystery3 correctly implements its
algorithm

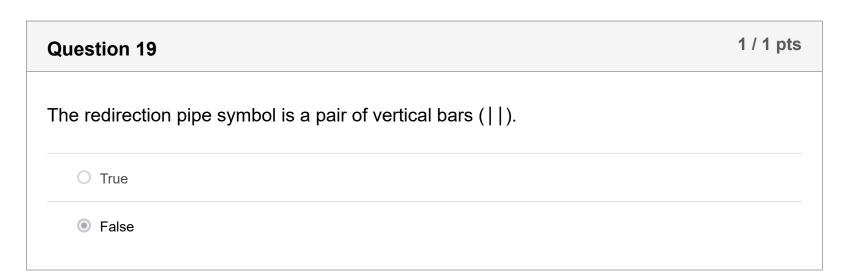
if (n < 2) is a ...

base case

mystery3 is efficient

True

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.
```



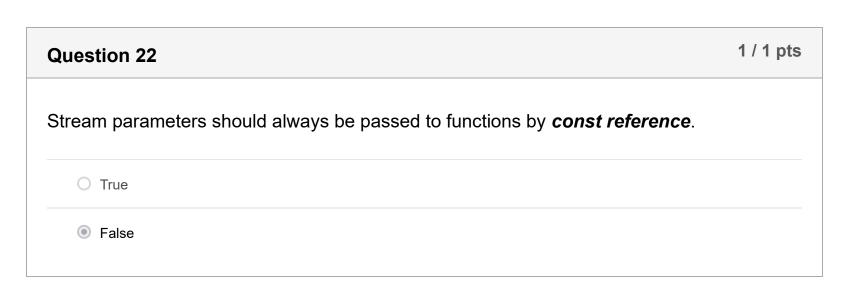
```
Question 20

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 role of the helper function computesign?
```

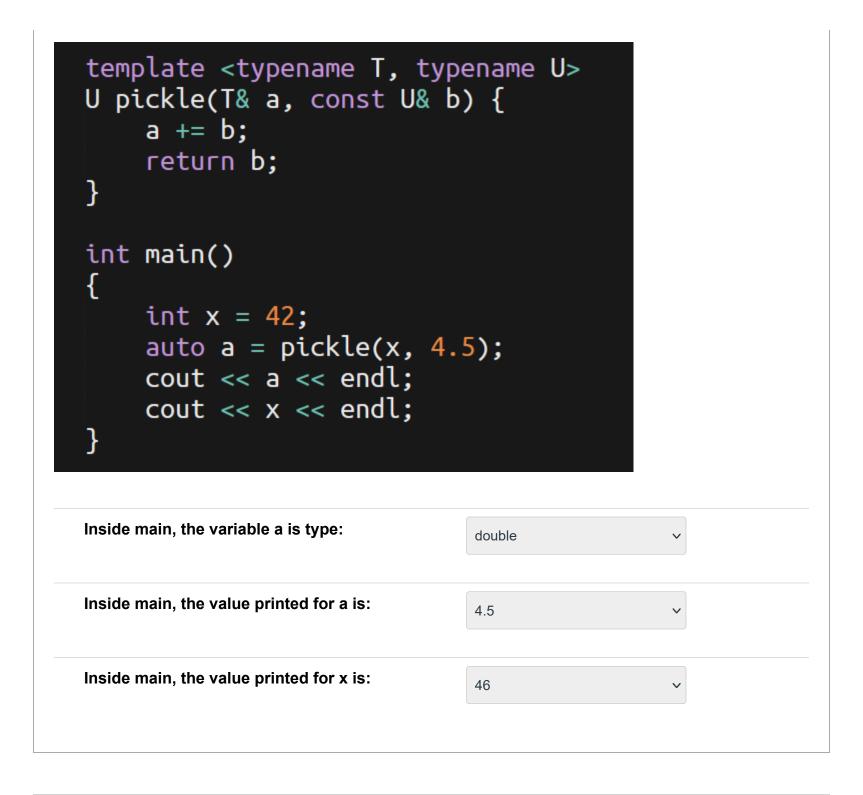
•	it makes sure the sign (positive or negative) alternates as each term of the series is computed
0	it is called just one time to set the sign of the final result
0	it is the recursive call in the function
0	it checks the sign of the number and returns true if it is positive and false if negative

Question 21	1 / 1 pts
Assume the user types "brown cow" when this code runs. What prints?	
<pre>int n; if (cin >> n) cout << "X\n"; else cout << "Y\n";</pre>	
O x	
Runtime exception thrown	
Y	
O Does not compile	



Question 23	1 / 1 pts
Match the following code the the answers below.	





The file grades.txt contains lines of text that look like this:

Smith 94
Jones 75
...

Each line of text contains the student's name (a single word) and an integer score. What is the legal way of reading one student's information, given the following code?

string name;
int score;
ifstream in("grades.txt");

in << name << score;
None of these

in >> name >> score;
getline(in, name); getline(in, score);
getline(in, name); in >> score;

Question 25	1 / 1 pts
Infinite recursion can occur because	
the base case is missing one of the necessary termination conditions	
a second function is called from the recursive one	
O the recursive function is called more than once	
O the recursive case is invoked with simpler arguments	

