

Review Test Submission: Homework 6

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Course	Java Programming (Intermediate) (92759)
Test	Homework 6
Started	3/17/24 10:22 PM
Submitted	3/17/24 10:47 PM
Due Date	3/26/24 11:59 PM
Status	Completed
Attempt Score	25 out of 25 points
Time Elapsed	24 minutes
Results Displayed	All Answers, Submitted Answers, Correct Answers

Question 1

1 out of 1 points

Every recursive definition can have zero or more base cases.

Selected Answer: ☒ False

Answers: ☐ True
☒ False

Question 2

1 out of 1 points

Which of the following statements about recursion are true?

Selected Answer: ☒ Both a and b.

Answers: ☐ Recursion can occur infinitely.
☐ Recursion uses a termination test.
☒ Both a and b.
☐ Neither a nor b.

Question 3

1 out of 1 points

The base case starts the recursion.


Selected Answer: ☒ False


Answers: True
 False

Question 4

1 out of 1 points

The recursion step should:



Selected Answer:  call a fresh copy of the recursive method to work on a smaller problem.

Answers: check for the base case.
 call a fresh copy of the recursive method to work on a smaller problem.
make two calls to the recursive method.
iterate until it reaches a termination condition.

Question 5

1 out of 1 points

The number of calls to recursively calculate the Fibonacci value of 7 is:

Selected Answer:  41
Answers: 7
13
 41
39

Question 6

1 out of 1 points

Consider the following definition of a recursive method.

```
public static int recFunc(int num)
{
    if (num >= 10)
        return 10;
    else
        return num * recFunc(num + 1);
}
```

What is the output of the following statement?

```
System.out.println(recFunc(8));
```

Selected Answer:  720

Answers: 8
72
☒ 720
None of these

Question 7

1 out of 1 points

All of the following are true for both recursion and iteration except _____.

Selected Answer: ☒ they have a base case.

Answers: ☒ they have a base case.
they can cause infinite loops or infinite recursion.
they are based on a control statement.
both gradually approach termination.

Question 8

1 out of 1 points

Which of the following statements describe the base case of a recursive algorithm?

- (i) $F(0) = 0$;
- (ii) $F(x) = 2 * F(x - 1)$;
- (iii) if $(x == 0)$
 $F(x) = 5 + x$;

Selected Answer: ☒ Both (i) and (iii)

Answers: Only (i)
Only (ii)
Only (iii)
☒ Both (i) and (iii)

Question 9

1 out of 1 points

If the base case in a recursive method is never reached:

Selected Answer: ☒ the method will call itself indefinitely

Answers: the method will call itself only once
the result will always be off by one
☒ the method will call itself indefinitely

the method will never call itself

Question 10

1 out of 1 points

What is the limiting condition of the code in the code below?

```
public static int func2(int m, int n)
{
    if (n == 0)
        return 0;
    else
        return m + func2(m, n - 1);
}
```

Selected Answer: ☒ n >= 0

Answers: ☒ n >= 0

☐ m > n

☐ m >= 0

☐ n > m

Question 11

1 out of 1 points

Recursion often is preferable to iteration because _____.

Selected Answer: ☒ it models the problem more logically.

Answers: ☐ it is faster.

☐ it requires less memory.

☒ it models the problem more logically.

☐ All of the above.

Question 12

1 out of 1 points

Consider the following definition of a recursive method.

```
public static int foo(int n)    //Line 1
{                               //Line 2
    if (n == 0)                //Line 3
        return 0;              //Line 4
    else                        //Line 5
        return n + foo(n - 1);  //Line 6
}
```

Which of the statements represent the base case?

Selected Answer: ☒ Statements in Lines 3 and 4

Answers:

- ☒ Statements in Lines 3 and 4
- Statements in Lines 5 and 6
- Statements in Lines 3, 4, and 5
- None of these

Question 13

1 out of 1 points

Recursion is often less efficient than iteration because _____.

Selected Answer: ☒ it can cause an explosion of method calls.

- Answers:
- ☒ it can cause an explosion of method calls.
- it is not as intuitive.
- recursive methods are harder to debug.
- recursive methods take longer to program.

Question 14

1 out of 1 points

Every recursive call has its own code.

Selected Answer: ☒ True

- Answers:
- ☒ True
- False

Question 15

1 out of 1 points

Each time a fractal's pattern is applied to it, the fractal is said to be at a new _____.

Selected Answer: ☒ All of the above.

- Answers:
- level.
- depth.
- order.
- ☒ All of the above.

Question 16

1 out of 1 points

Like _____, a recursive method must have some way to control the number of times it repeats.

Selected Answer: ☒ a loop

Answers: ☒ a loop
☐ any method
☐ a class constructor
☐ an event

Question 17

1 out of 1 points

The body of a recursive method contains a statement that causes the same method to execute before completing the current call.

Selected Answer: ☒ True

Answers: ☒ True
☐ False

Question 18

1 out of 1 points

Which of the following is false?

Selected Answer: ☒ The value 1 can be implicitly converted to a BigInteger.

Answers: Since BigInteger is not a primitive type, we can't use the arithmetic, relational and equality operators with BigIntegers.

BigInteger method compareTo compares the BigInteger number that calls the method to the method's BigInteger argument, and returns -1 if the BigInteger that calls the method is less than the argument, 0 if they're equal or 1 if the BigInteger that calls the method is greater than the argument.

☒ The value 1 can be implicitly converted to a BigInteger.

BigInteger can represent integer values larger than what primitive type long can represent.

Question 19

1 out of 1 points

What is the output of func2(2, 3) in the code below?

```
public static int func2(int m, int n)
{
    if (n == 0)
        return 0;
    else
        return m + func2(m, n - 1);
}
```

Selected Answer: ☒ 6

Answers: 2

3

5

☒ 6

Question 20

1 out of 1 points

Recursive algorithms are implemented using while loops.

Selected Answer: ☒ False

Answers: True

☒ False

Question 21

1 out of 1 points

Which of the following statements about the code below is always true?

```
public static int func2(int m, int n)
{
    if (n == 0)
        return 0;
    else
        return m + func2(m, n - 1);
}
```

Selected Answer: ☒ $\text{func2}(m, n) = m * n$ for $n \geq 0$

Answers: $\text{func2}(m, n) = \text{func2}(n, m)$ for $m \geq 0$

☒ $\text{func2}(m, n) = m * n$ for $n \geq 0$

$\text{func2}(m, n) = m + n$ for $n \geq 0$

$\text{func2}(m, n) = n * m$ for $m \geq 0$

Question 22

1 out of 1 points

The operands of an operator are evaluated _____.

Selected Answer: ☒ from left to right.

Answers: from right to left.

☒ from left to right.

at the same time.

in an order that is specific to each operator.

Question 23

1 out of 1 points

Fractals that yield an exact copy of the original when a portion of the original image is magnified are called _____ fractals.

Selected Answer: ☒ strictly self-similar.

Answers: ☒ strictly self-similar.

Koch Curve.

similar.

mirror.

Question 24

1 out of 1 points

You can think of a recursive method as having unlimited copies of itself.

Selected Answer: ☒ True

Answers: ☒ True

False

Question 25

1 out of 1 points

A method that calls itself is an iterative method.

Selected Answer: ☒ False

Answers: True

☒ False

Monday, May 6, 2024 10:23:34 AM CDT

← OK