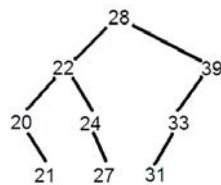|					
1)C	6)A	11)A	16)B	21)A	26)B
2)B	7)A	12)C	17)B	22)C	27)A
3)A	8)A	13)D	18)E	23)E	28)C
4)E	9) B	14)B	19)A	24)B	29)B
5)E	10)D	15)B	20)D	25)A	30)D

1) C – This problem requires the knowledge that an else goes with the closest if regardless of how the code is tabbed. This is reffered to as the dangling else problem.

2) B – No Matter what Sue does for her first move, Becky should take the appropriate amount of cheese-puffs so that there are three left on the table. Sue will be forced to take either one or two, subsequently leaving one or two on the table, which Becky can eat to win.

3) A – Quicksort and Mergesort are n log n.

4) E – all answers end in state q2, which is not an accepting state.

5) D -- polymorphism means allowing a single definition to be used with different types of data (specifically, different classes of objects).

6) A – Using escape sequencers \\ prints as a single \, \" prints as ", and \' prints as '.

7) A – for all natural numbers passed to this function a Fibonacci number will be returned.

8) A – This uses that the sum of 1 over n factorial from 0 to infinity is e.

9) B -- Alan Mathison Turing (June 23, 1912 – June 7, 1954) was a British mathematician, logician, and cryptographer. Turing is often considered to be a father of modern computer science.

10) D – Every recursive call generates 2 new recursive calls therefore it is O(2^n).

11) A – With every recursive call, as long as the strings first and last characters always match up throughout the string it will return true. These are called Palindromes.

12) C – 11111111 -> $2^0+2^1+2^2+2^3+2^4+2^5+2^6+2^7 = 255$

13) D – Lisp is a functional language where functions are always called by passing lists, for example (+ 2 2) means 2+2
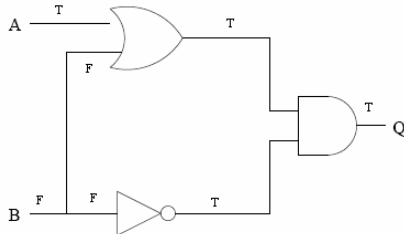
14) B --

15) B – This is the standard implementation of a swap function.

16) B – The first pop will return C, the second pop will return D, and the third pop will return B.

17) B – The first search step will guarantee to cut the amount of total possible goal nodes to floor(23/2)=12. The second step floor(12/2)=6. The third step floor(6/2)=3. The fourth step floor(3/2)=1. The fifth step there is only one possible node left, so you are guaranteed to find the element by the fifth search step.

18) E – Error, static method attempting to change none static value.

19) A – Using (true, false) will result in the following diagram

20) D -- In RPN if you come across a value you push that value onto a stack. If you come across an operand you take the top two elements on the stack, apply the operand to those values and push the answer back onto the stack. So 6 4 5 + * = (4+5)*6

21) A -- !(num != max) is equivalent to num == max. num == max || num == max is equivalent to just num == max.

22) C –   mystery(248) is the first function call, the if statement evaluates to true so it calls mystery(24) and postpones the rest of the function. mystery(24) calls mystery(2) and postpones the rest of the function. mystery(2) prints 2 and returns to the original call of mystery(24). Mystery(24) prints 4 and returns to mystery(248). mystery(248) prints 8. The final printout is 248.

23) E – All variable types that start with a lowercase letter in java are primitives.

24) B – 8/3 is 2, because both 8 and 3 are integers and therefore Java uses integer division.

25) A – Although attempts have been made to program computers to play Go, success in that area has been moderate at best — development in this area has not reached the level of chess programs.

26) B – The iterations are as follows.
The concatenation is 011223.

x	y	x + y
0	0	0
0	1	1
1	0	1
1	1	2
2	0	2
2	1	3

27) A – In providing services to people, and in computer science, transport and operations research a queue is a First-In-First-Out (FIFO) process.

28) C – The JVM (Java Virtual Machine) is a crucial component of the Java platform. The availability of JVMs on many types of hardware and software platforms enables Java to function both as middleware and a platform in its own right. Hence the expression "Write once, run anywhere."

29) B – even though the while statement is false the first execution, A do while statement will always do the do block at least once.

30) D – The function bazz squares a number. The function bar takes a procedure and a LinkedList and returns a new LinkedList with the same elements as before but with the passed in procedure applied to them. In this case all the numbers in the LinkedList will be squared.