Name_____

1. What is the difference between `Integer` and `int`?

2. What is the purpose of an `Intetger.ParseInt()` statement?

3. Write code to convert `String s="123";` to an integer and store the resulting value in a variable called q.

4. Why do we typically override the `toString()` function in a class?

5. What is encapsulations

6. What is boxing and unboxing?

7. Why do programmers practice data hiding?

8. What is the difference between Z, 'Z' and "Z"?

9. What is the difference between = and == ?

10. What does `(double)squid` do?

11. What does `x.equals(y)` do?

12. What is a static method?

13. What is a static field?

14. What is a `this` ?

15. Why would a class implement the Comparable interface?

16. What is an array?

17. Declare an array of 10 integers called x.

18. What is an `ArrayList`?

19. Declare an `ArrayList` of strings called y.

20. What is big O notation used to describe?

21. What is the strategy of linear search?

22. What is the strategy of binary search?

23. What are the relative efficiencies of the two searching methods described above?

24. Name an inefficient sorting method?

25. Name an efficient sorting method?

26. What are the relative efficiencies of the two searching methods described above?

27. Give three examples of a program types where efficiency would be important:

28. What is an exception.

29. What is the purpose of a `try` statement?

30. What is the purpose of a `catch` statement?

31. What is the purpose of a `throw` statement?

32. Do we need a `try` statement when opening a file?

33. Why would we use the following code: `Scanner in = new Scanner(System.in);`

34. Given #34 what does: `in.nextInt();` do?

35. Given #34 what does: `in.next ();` do?

36. Given #34 what does: `in.nextLine();` do?

37. Why would we use the following code: `Random r = new Random();`

38. Given #38 what does: `r.next();` do?

39. Given #38 what does: `r.nextInt(10);` do?

40. What is recursion?

For the following three functions, indicate the output on the right.

No	Code	Output
| 41 | ```java
class csc222{
static void Mystery(int n) {
   System.out.prinln(n);
   if (n != 0) Mystery(n - 1);
}
static void main() {
    Mystery(9);
}}
``` | |
| 42 | ```java
class csc222{
static void Mystery(int n) {
   if (n != 0) Mystery(n - 1);
 System.out.prinln(n);
}
static void main() {
    Mystery(9);
}}
``` | |
| 43 | ```java
class csc222{
static void Mystery(int n) {
   System.out.prinln(n);
   if (n != 0) Mystery(n - 1);
}
static void main() {
    Mystery(-9);
}}
``` | |

44. Suppose we have `int [] ray= {12,23,2,…,17,45};` (where … represents a lot more integers).
Write the code to find the location of the minimal value?