CS239

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What's wrong with the following code?

```
1   /***************************************************
2   * Return the mean, or -1 if the array has length 0.
3   ***************************************************/
4   public static double mean(double[] numbers)
5       {
6           double sum = 0;
7           double result;
8
9           if (numbers.length == 0)
10          {
11              result = -1;
12          }
13          else
14          {
15              for (int i = 0; i < numbers.length; i++)
16              {
17                  sum += numbers[i];
18              }
19              result = sum / numbers.length;
20          }
21          return result;
22      }
```

Why Exceptions?

One reason: Sometimes there is no return value that can be used to indicate an error has occurred.

Example...

Let's write a Java program that reads a text file containing simple mathematical expressions, and writes the results:

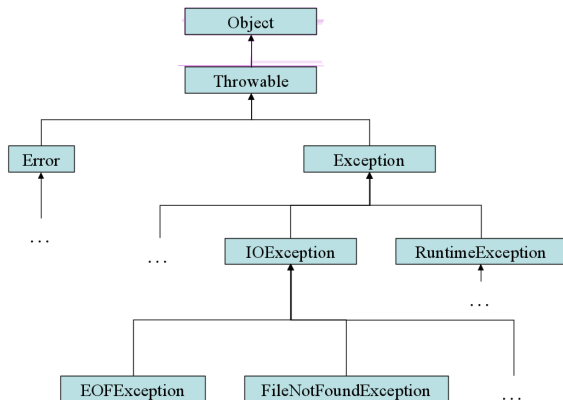- If the input file contains:

```
2 + 3
22 / 2
3 * 2
```

- Terminal output should be:

```
5
11
6
```

Exception Class Hierarchy

What will be printed?

```
1        fileName = "NONEXISTENTFILE.txt";
2        System.out.print("A ");
3        try
4        {
5            System.out.print("B ");
6            file = new File(fileName);
7            scanner = new Scanner(file);
8            System.out.print("C ");
9
10       }
11       catch (FileNotFoundException e)
12       {
13           System.out.print("D ");
14       }
15       finally
16       {
17           System.out.print("E ");
18       }
19       System.out.print("F ");
```

Question

Characterize the following code, assuming `numbers` is an array of doubles. (There are no syntax errors.)

```
1           double sum = 0;
2           try
3           {
4               for (int i = 0; i <= numbers.length; i++)
5               {
6                   sum += numbers[i];
7               }
8           }
9           catch (ArrayIndexOutOfBoundsException e)
10          {
11              //Do nothing.
12          }
13          System.out.println(sum);
```

1 Correct result, appropriate use of exception handling.

2 Incorrect result, appropriate use of exception handling.

3 Correct result, inappropriate use of exception handling

4 Incorrect result, inappropriate use of exception handling.