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Q1. Two well-known subclasses of Java `Exception` are `IOException` and `RuntimeException`. For each of the exception classes below, classify them into either IOException or RuntimeException.

`ArithmeticException`	☐ `IOException`	☑ `RuntimeException`
`EOFException`	☑ `IOException`	☐ `RuntimeException`
`FileNotFoundException`	☑ `IOException`	☐ `RuntimeException`
`ArrayIndexOutOfBoundsException`	☐ `IOException`	☑ `RuntimeException`
`NumberFormatException`	☐ `IOException`	☑ `RuntimeException`
`InputMismatchException`	☑ `IOException`	☐ `RuntimeException`
`NullPointerException`	☐ `IOException`	☑ `RuntimeException`

Q2. Assume that the program fragments below can be compiled successfully. Explain what will happen each of them is executed:

(a)
```
int [] a = null;
System.out.println(a[0] / a[1] + a[2] / a[3]);
```
Reason: NullPointerException

(b)
```
int [] a = { 1, 3, 5 };
System.out.println(a[0] / a[1] + a[2] / a[3]);
```
Reason: ArrayIndexOutOfBoundsException

(c)
```
int [] a = { 1, 0, 5, 2 };
Ssytem.out.println(a[0] / a[1] + a[2] / a[3]);
```
Reason: ArithmeticException