CIP SESSION 3 PROBLEM 4

CODE:

```
// A
class A {
int x;
double y;
public:
A(int a, double b) : x(a), y(b) {}
};

// B
class B {
string name;
public:
B(string n) : name(n) {}

};

// C
class C {
FILE* fp;
public:
C(const char* filename) { fp = fopen(filename, "r"); }
~C() { if (fp) fclose(fp); }
};

// D
class D {
int* arr;
public:
D(int n) { arr = new int[n]; }
~D() { delete[] arr; }
};
```

ARGUMENT:

Which of the following classes violate the Rule of Three (i.e., need custom copy constructor/destructor/assignment but don't have them)?
For each, answer Yes or No, and justify in one line.

JUSTIFICATION:

Class A

Answer: NO
Justification: Only uses built-in types (int, double), no dynamic memory/resource.

Class B

Answer: NO
Justification: string handles its own memory (deep copy already implemented).

Class C

Answer: YES
Justification: Manages a file resource (FILE*), destructor exists but copy/assignment would cause **double fclose**.

Class D

Answer: YES
Justification: Uses dynamic memory (new int[n]), destructor exists but default copy/assignment will cause **double delete**.