

Please read all the questions carefully and raise your hand for assistance if you have any questions. Keep your answers brief (but you can use the back side of the page if needed).

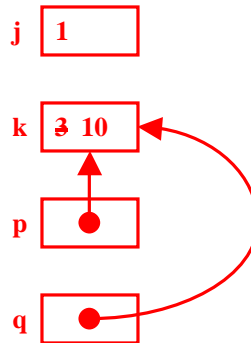
1. In Wednesday's lecture, we discussed the three possible storage classes for a variable: static, automatic, and dynamic. What's the difference between automatic and dynamic? (Be brief)

Automatic: Storage class of local variables in functions. Variables are created when the function is called and destroyed when the function returns.

Dynamic: Variables allocated on the heap under programmer control. They are created by new and exist until explicitly destroyed by delete.

2. Draw a boxes-and-arrows diagram showing the situation and values of variables after the following code fragment has been executed.

```
int j=1, k=3;
int *p; int *q;
p = &j;
q = &k;
p = q;
*p = 10;
```



3. Write down the output produced when the following program is executed. For brevity, the implementation code of member functions is given in the class declaration.

```
class A {
public:
    A (int i)      { cout << "INT"; }
    A (double d)  { cout << "DOUBLE"; }
    A (char c)    { cout << "CHAR"; }
};
```

```
int main() {
    double x = 1.0;
    char c = 'A';
    A a(c);
    A *b;
    b = new A(x);
    delete b;
}
```

Output:

CHARDOUBLE

(but it's fine if you wrote these on separate lines or with spaces in between)