

Name: _____

SSN: _____

CS 140A - Basic Proficiency Exam

1. (5 pts) Write code to reverse the contents of an integer array. You may assume the following has been declared, where **SIZE** has been declared as some constant.

```
int A[SIZE];
```

2. (5 pts) Write a function to compute and return n factorial ($n!$) of a positive number. An example factorial is $5! = 5 * 4 * 3 * 2 * 1$ and $0! = 1$.

3. (4 pts) Define pass-by-value and pass-by-reference.

4. (5 pts) Write a class that maintains information about an airplane. It should be able to keep track of the airline company, the number of seats on the plane, and the number of seats booked. You should also have a function to print out this information and a function to book a seat on the plane. Be sure not to overbook the seats.

5. (6 pts) Given the following declarations

```
struct stuff
{
    double x;
    int y;
    char name[20];
};

stuff list[20];
stuff thing;
```

write the type of each of the following expressions. Write *illegal* if not a valid statement.

list

list[10].x

list.y

thing

list[5].name

stuff