[1.] Consider these two codes:

```c
#include <stdio.h>  
#include <math.h>  
int main(void)  
{
    int j;
    j=11;
    do
    {
        j=j-1;
        printf("\n%i",j);
    } while(j>0);
    return 0;
}
```

What will the code on the left write to the screen?
What will happen when you run the code on the right?

[3.] Newton’s Universal Law of Gravity says that the magnitude of the gravitational force between two point masses is \( F = \frac{GM_1M_2}{r^2} \) and that the direction of the force lies along the line connecting the masses. Using this, and assuming \( M_1 \) is situated at the origin (0, 0) and \( M_2 \) is at \((x, y)\), explain why the \( x \) component of the force on \( M_2 \) is \( F_x = -\frac{G}{r^2} \). A picture might help your explanation.

Extra Credit: What is the \( x \) component of the force on \( M_1 \)?