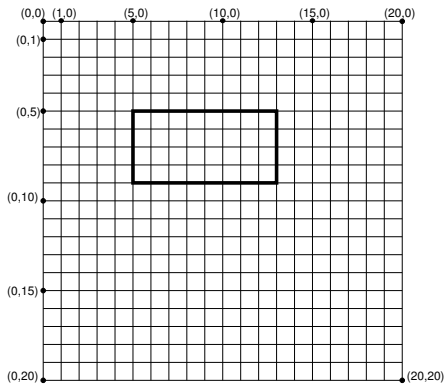


CISC 3120 Fall 2012 Lab I.2

1. These exercises all involve pen (or other writing implement of your choice) and paper (or another surface your writing implement can write on) rather than a computer.
2. Consider the rectangle below:



3. Translate it $+5$ in the x direction, -3 in the y -direction (using the multiplication method).
4. Starting from the original rectangle, scale it by 2, keeping the location of the upper left corner the same.
5. Starting from the original rectangle, translate it by $+5$ in the x direction, -3 in the y -direction (using the multiplication method) and then scale it by 3.
6. Starting from the original rectangle, scale it by 3 and then translate it by $+5$ in the x direction, -3 in the y -direction (using the multiplication method).
7. Starting from the original rectangle, rotate it 90 degrees.
8. Starting from the result of the last rotation, rotate by 270 degrees.

In all these cases, I'm sure you can do these calculations in your head, but that is not the point. That won't help you understand the method, and it won't help you learn how to answer exam questions which ask you to show how matrix computation can be used to achieve these transformations.