III. Systems of Inequalities:
1. Graph each individual inequality
2. Solution region is the intersection of the individual solutions, i.e., the area where they overlap...
3. Examples (pp.452-453): Exercises #42,46,56

HW: pp.452-453 / Exercises #1-7(odd),13-17(odd), 19,21,27,29,31,41,43,45,51,55,63,65,67
Read section 6.1 (pp.469-479)
I. Matrices (plural of matrix) —

A matrix is a “rectangular array” of numbers; i.e., a set of numbers arranged into rows and columns. A matrix of order “$m \times n$” has $m$ rows and $n$ columns...

II. $a_1x + b_1y = c_1$ can be $a_2x + b_2y = c_2$ represented as $2 \times 3$ (augmented) matrix

\[
\begin{pmatrix}
 a_1 & b_1 & c_1 \\
 a_2 & b_2 & c_2
\end{pmatrix}
\]

$a_1x + b_1y + c_1z = d_1$

$a_2x + b_2y + c_2z = d_2$ $\iff$

$a_3x + b_3y + c_3z = d_3$

\[
\begin{pmatrix}
 a_1 & b_1 & c_1 & d_1 \\
 a_2 & b_2 & c_2 & d_2 \\
 a_3 & b_3 & c_3 & d_3
\end{pmatrix}
\]

$3 \times 4$ (augmented) matrix
III. Elimination –

Matrix method of solving a system of equations using **row operations** (p.472):
1. switch any two rows
2. multiply each number in a row by a constant
3. replace a row by adding (or subtracting) it to (or from) a multiple of another row

IV. Examples (p.480): Exercises #16,18
V. \[
\begin{bmatrix}
a_1 & b_1 & c_1 & d_1 \\
a_2 & b_2 & c_2 & d_2 \\
a_3 & b_3 & c_3 & d_3 \\
\end{bmatrix}
\]
transformed by row operations
\[
\begin{bmatrix}
1 & 0 & 0 & x \\
0 & 1 & 0 & y \\
0 & 0 & 1 & z \\
\end{bmatrix}
\]
yields \((x,y,z)\) as the solution to the corresponding system of equations represented by the original matrix...

VI. Examples (p.495): Exercises #34,44

HW: p.480 / Exercises #5,9-25(odd)

Read section 6.2 (pp.463-488)