**Activity 1.1.4 Objective Functions & Feasible Regions**

The objective function for the peacekeeping problem is $F=x+y$. Let’s examine how the objective function interacts with the feasible region.

1. Let$F=1$. Graph $x+y=1$ on the graph below. Label the graph of the line.
2. Let $F=3$. Graph $x+y=3$ on the graph below. Label the graph of the line.
3. Select three more values for *F*, create an equation $F=x+y$ for each value of *F*, and graph each resulting equation. Label the graph of the lines. Show the resulting equations below.

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**Additional Practice**

1. Graph the solution sets of the following linear inequalities in two variables:
2. $x>2$ B. $y<-3$



1. How would the graphs differ in parts A and B above if you were graphing the solution set of an inequality in one variable? Graph both inequalities.





1. Graph the solution sets of the following linear inequalities in two variables.

A. $12x+4y\leq 36$ B. $-x+2y\geq 3$

C. $2x-4y>-6$ D. $-5x-2y<8$



1. Graph the solution sets of the following systems of linear inequalities.

A. $x>0,y>-5, 5x+4y<20$ B. $x\geq 0, y\geq 0, y>x, y<5$

