

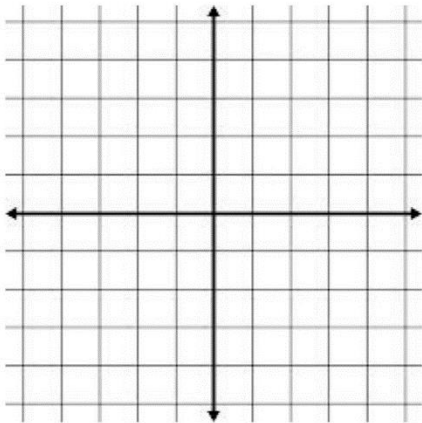
MATH 120 Section 5.2 Systems of Linear Inequalities in Two Variables

Solving a System of Linear Inequalities Graphically

Examples:

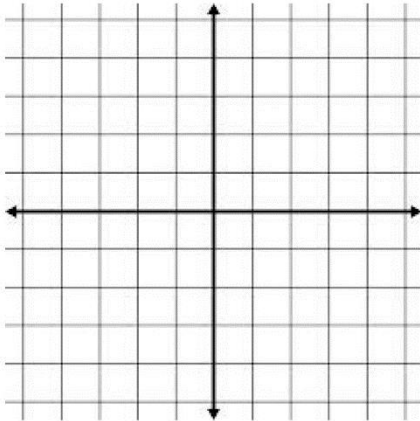
a) Graph the solution to the system of inequalities. This shaded region is called the solution region or the feasible region. b) Find the corner point(s) of the feasible region. c) Is the feasible region bounded or unbounded?

1)
$$\begin{aligned} x - 2y &\geq 2 \\ x + y &\leq 5 \end{aligned}$$



a) Graph the solution to the system of inequalities. This shaded region is called the solution region or the feasible region. b) Find the corner point(s) of the feasible region. c) Is the feasible region bounded or unbounded?

2)
$$\begin{aligned} 2x + y &\leq 4 \\ x + y &\leq 3 \\ x &\geq 0 \\ y &\geq 0 \end{aligned}$$



3) A farmer can buy two types of plant food, mix A and mix B. Each cubic yard of mix A contains 50 pounds of phosphoric acid, 12 pounds of nitrogen, and 10 pounds of potash. Each cubic yard of mix B contains 20 pounds of phosphoric acid, 15 pounds of nitrogen, and 50 pounds of potash. The minimum monthly requirements are 800 pounds of phosphoric acid, 480 pounds of nitrogen, and 500 pounds of potash. Find the set of feasible solutions graphically for the amounts of mix A and mix B that can be used.

