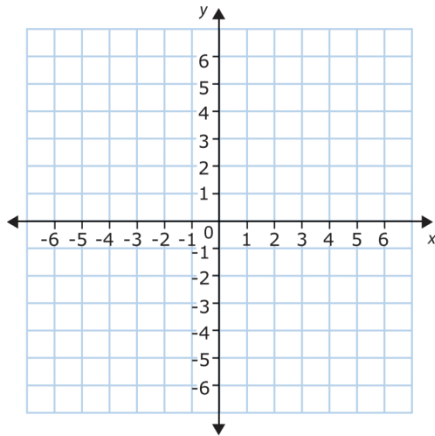


Solving Linear Inequalities by Graphing

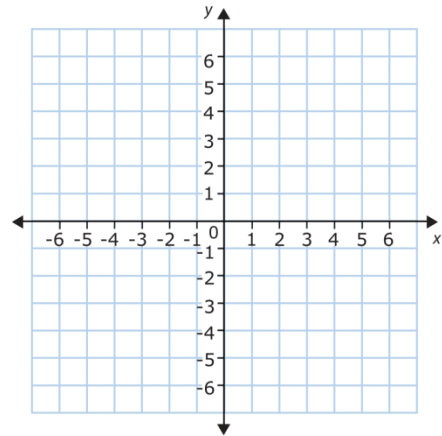
Name: _____

Solve the following systems of linear inequalities by graphing them on the coordinate plane.

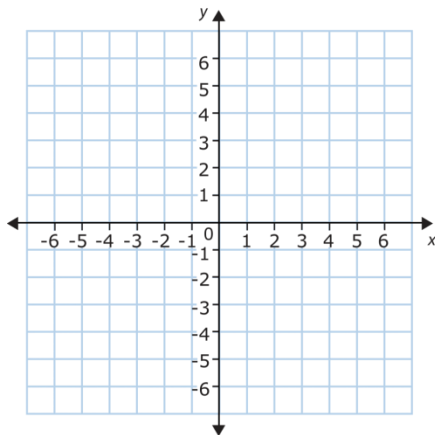
$$1) \begin{cases} y < \frac{1}{2}x - 3 \\ y \geq -x + 2 \end{cases}$$



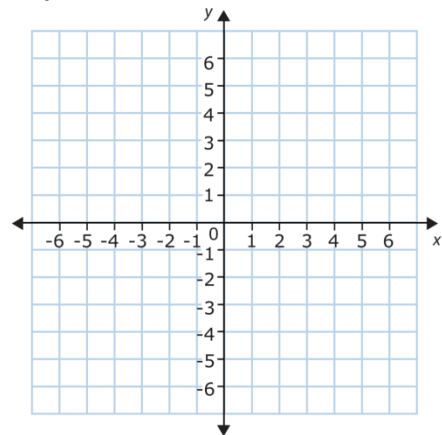
$$2) \begin{cases} x - 3y < 6 \\ 2x + y > 1.5 \end{cases}$$



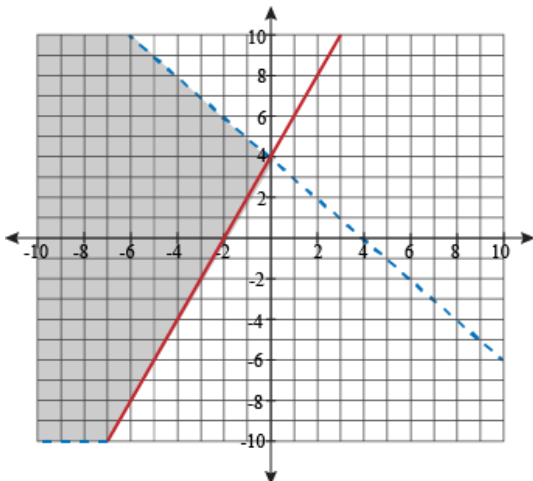
$$3) \begin{cases} y \leq -2x + 4 \\ y > x - 3 \end{cases}$$



$$4) \begin{cases} y < -3x + 5 \\ y \leq x - 2 \end{cases}$$



5) The solution to a system of linear inequalities is shown on the graph below. Indicate whether each point listed below is (Yes) or is not (No) part of the solution region for the graph.



(-3, 1) _____

(-4, -6) _____

(2, 1) _____

(-2, 0) _____

(-4, 0) _____

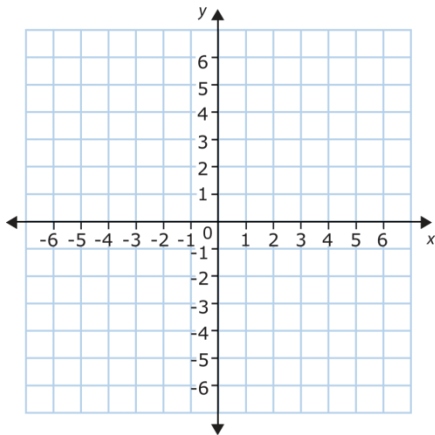
(-2, 6) _____

(0, 4) _____

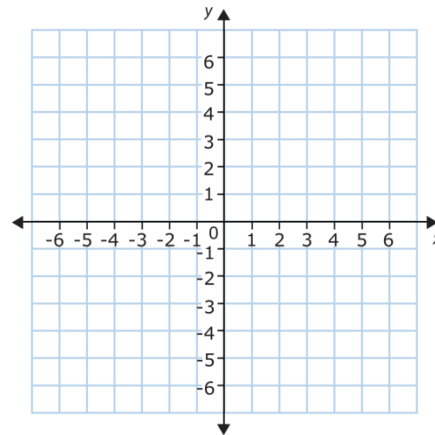
(0, 0) _____

(-20, 15) _____

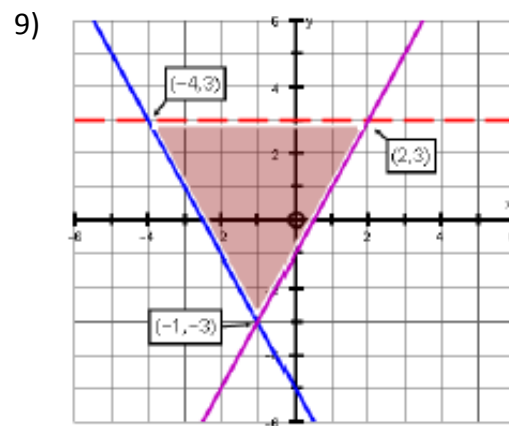
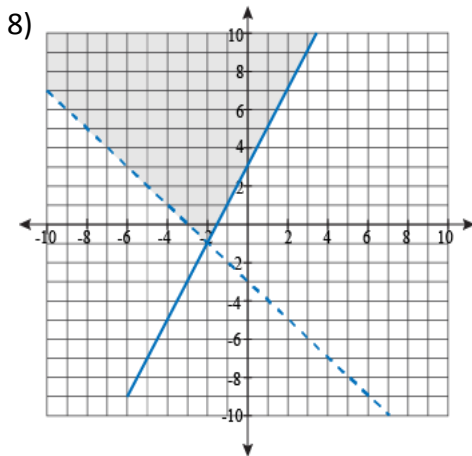
$$6) \begin{cases} x \geq -2 \\ x \leq 3 \\ y \geq -x + 1 \\ y \leq 4 \end{cases}$$



$$7) \begin{cases} x \leq 6 \\ \frac{1}{2}x - y \geq 1 \\ 2x + y \geq 6 \end{cases}$$



Determine the system of inequalities that could be used to create the solution region graphed below.



10) Israel was given a system of 4 inequalities to graph. He determined that four vertices created the boundary points for the solution region. The vertices are: $(-2, -2)$, $(-2, 4)$, $(2, 2)$, and $(2, 6)$. Write and graph the 4 linear inequalities that made up Israel's system.

