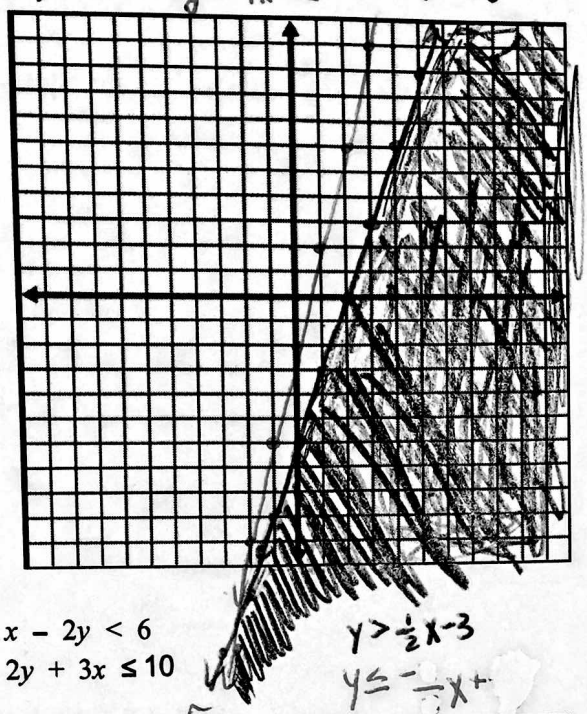
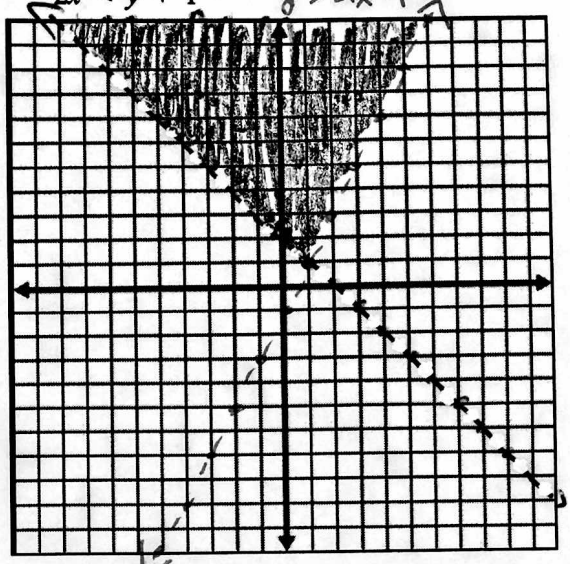
Systems of Inequalities

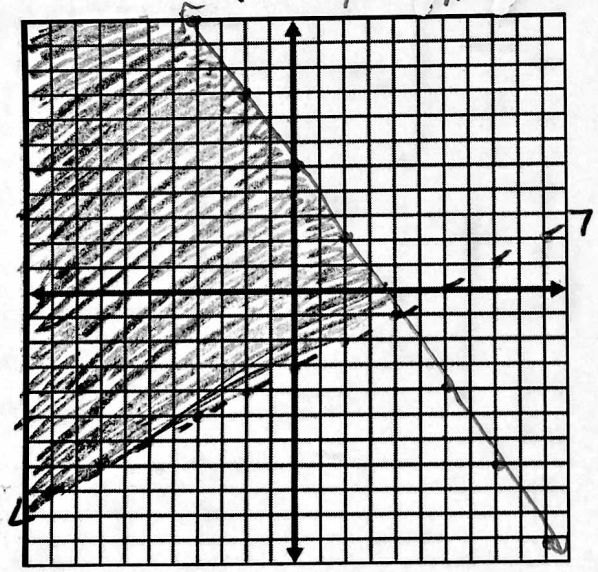
1. $y + 6 \leq 3x$ $y \leq 3x-6$ Ugh-not a great system.
   $4x > y + 2$ $y < 4x-2$



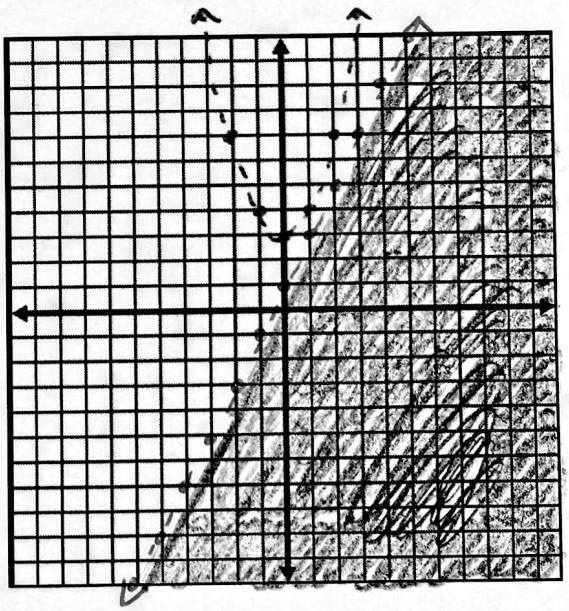
2. $x + y > 2$ $y > -x+2$
   $2x < y + 1$ $y > 2x-1$



3. $x - 2y < 6$
   $2y + 3x \leq 10$ $y > \frac{1}{2}x-3$ $y \leq -\frac{3}{2}x+$



4. $x^2+3 > y$ $y < x^2+3$
   $y < 2x+1$



5. Jonah is going to the store to buy candles. Small candles cost \$3.50 and large candles cost \$5.00. He needs to buy at least 20 candles, and he cannot spend more than \$80. Write a system of linear inequalities that represent the situation. S=Small L=large $S+L \geq 20$, $3.5S+5L \leq 80$

6. During a family trip, you share the driving with your dad. At most, you are allowed to drive for three hours. While driving, your maximum speed is 55 miles per hour. Write a system of inequalities describing the possible numbers of hours t and distance d you may have to drive. Is it possible for you to have driven 160 miles?

$t \leq 3$
$55t \leq d$

55 × 3 = 165 yes
165 > 160, so ↑