Math 3　　　　　　　　　　　　　　　Name:_____

Unit 1 Day 3 HW　　　　　　　　　　Date:_____

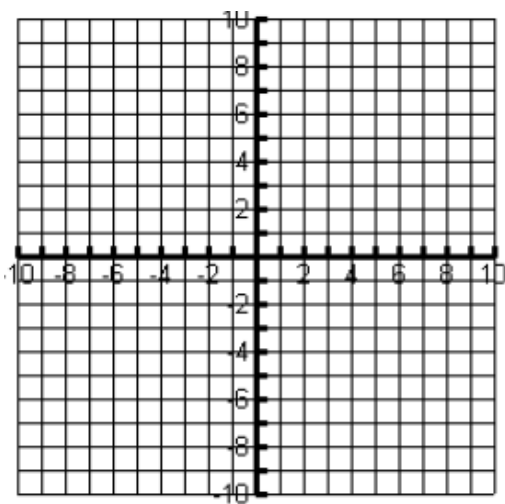**Solve the system of inequalities.**
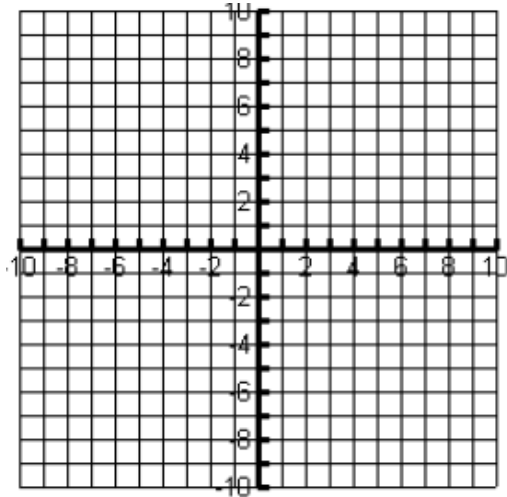
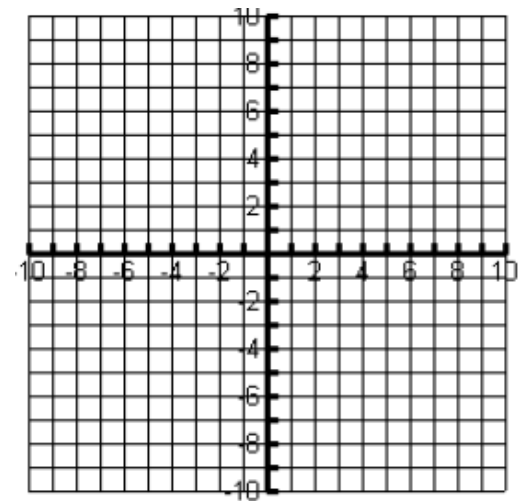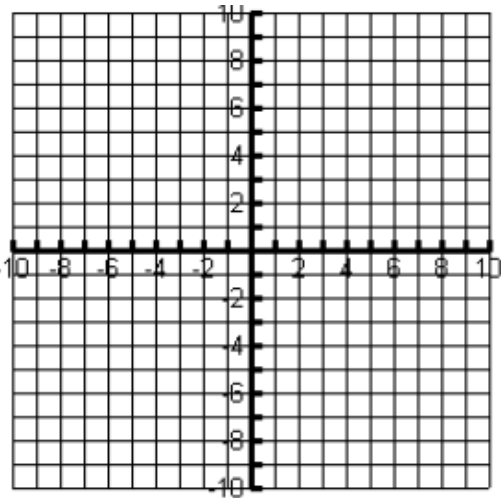|	
$2x + 3y > -9$ $-x + y \leq 4$	$4x + 2y \leq -8$ $-x - 3y < 6$
$f(x) > 2x^2 - 6x - 7$ $4x + f(x) \leq 10$	$-(x-2)^2 + 7 \leq y$ $-2x + 2y < -6$ **Try to graph the quadratic function without a calculator.**
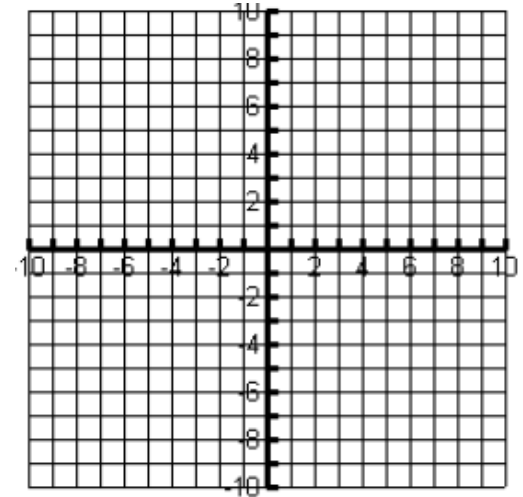
$y < -x + 4$
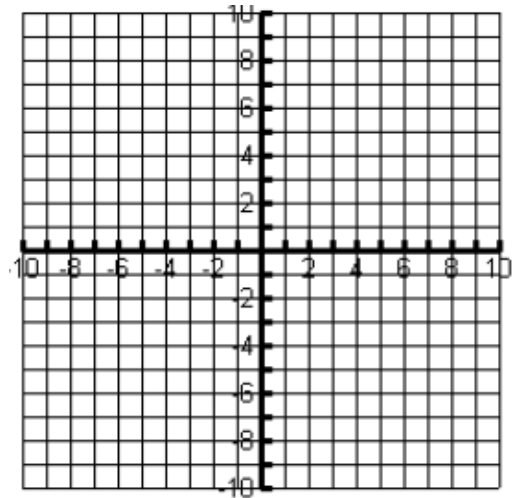
$y < x - 6$

$y > -3x - 4$


$f(x) \le -(x+3)^2 + 8$

$f(x) \ge 2(x+3)^2 - 6$

A sundae requires 3 ice-cream scoops and 4 strawberries, and a milkshake requires 2 ice-cream scoops and 6 strawberries. Ramses wants to make sundaes and milkshakes with at most 25 ice-cream scoops and 37 strawberries. Let's form a system of inequalities to represent his conditions. Let x denote the number of sundaes he makes and y the number of milkshakes he makes. Graph your solution on the following graph.
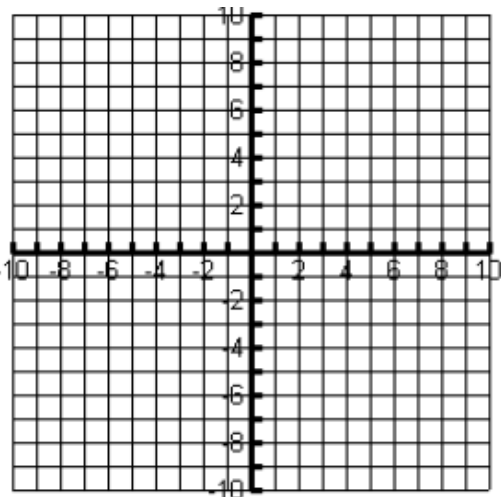
For a person of height h (in inches), a healthy weight W (in pounds) is one that satisfies this system of inequalities:

$w \ge \dfrac{19h^2}{703}$

$w \le \dfrac{25h^2}{703}$

Graph the system for $0 \le h \le 80$ using your graphing calculator. What is the range of healthy weights for a person 67 inches tall?