Learning Target A1: I can solve a system of 2 variables – equations and inequalities
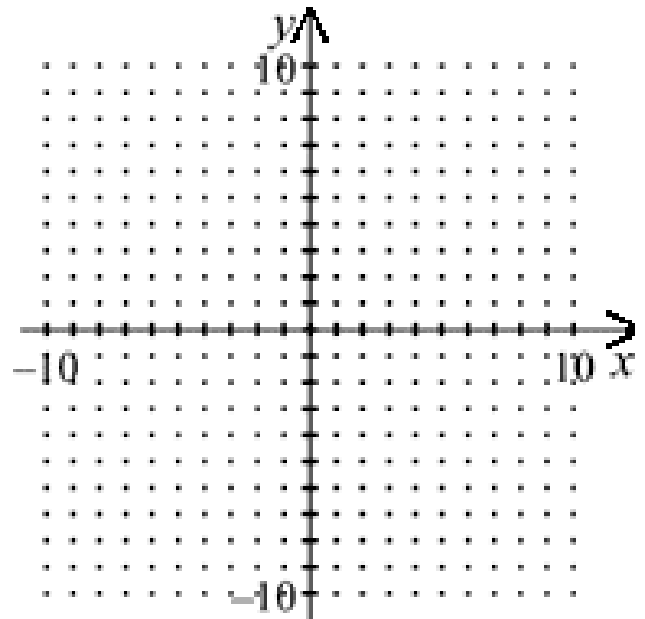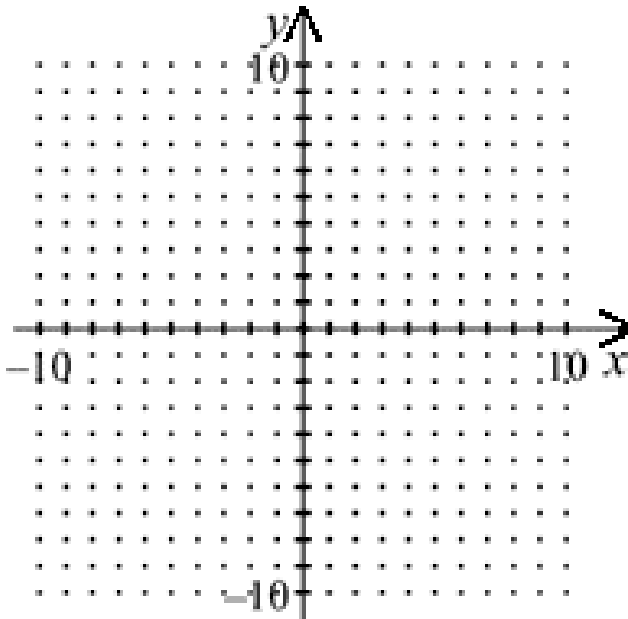
The adminission fee at a small fair is $1.50 for children and $4.00 for adults. On a certain day, 2200 people enter the fair and $5050 is collected. How much is collected from adults?

Solve the system below:

$-2x + y > 2$

$-6x - 2y \le -14$

Create a graph of 2 linear inequalities and then write the corresponding system.
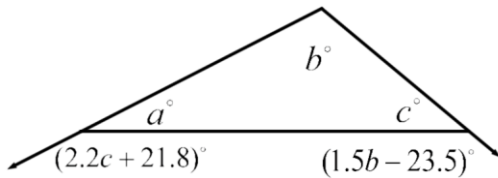

Learning Target A2: I can solve a systems of 3 variables – equations

Souvenir hats, t-shirts, and jackets are sold at a rock concert. Three hats, two t-shirts, and one jacket cost $140. Two hat, two t-shirts, and two jackets cost $170. One hat, three t-shirts, and two jackets cost $180. Find the prices of the individual items.

A triangel has one angle that measures $5°$ more than twice the smallest angle, and the largest angle measures $11°$ less than 3 times the measure of the smallest angle. Find the measures of the three angles.

Use the following picture to identify the angles:

Triangle with angles labeled $b°$ at top, $a°$ and $c°$ inside, with exterior angle expressions $(2.2c + 21.8)°$ on the left and $(1.5b - 23.5)°$ on the right.

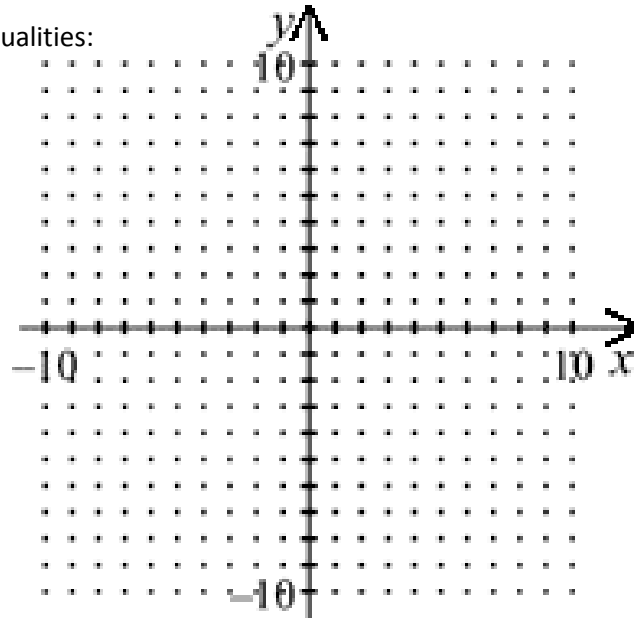**Learning Target A3: I can model problems using systems of equations (linear programming)**

Find the maximum and minimum values of the given system of inequalities:

$x + y \geq 2$

$5x - 6y \leq 10$

$8y \leq 3x + 16$

$f(x, y) = 2x + 6y$

Write the constraints and maximumizing equation for the following:

Roland's Boat Tours sells deluxe and economy seats for each tour it conducts. In order to complete a tour, at least 16 economy seats must be sold and at least 5 deluxe seats must be sold. The maximum number of passengers allowed each boat is 40. Roland's Boat Tours makes $40 profit for each economy seat sold and $35 profit for each deluxe seat sold. What is the maximum profit from one tour?

Write a scenario that would need these constraints:

$x \geq 0$

$y \geq 0$

$x + y \leq 5$

$9x + 12y \geq 36$

$5x + 10y \geq 20$

$z = 20x + 30y$