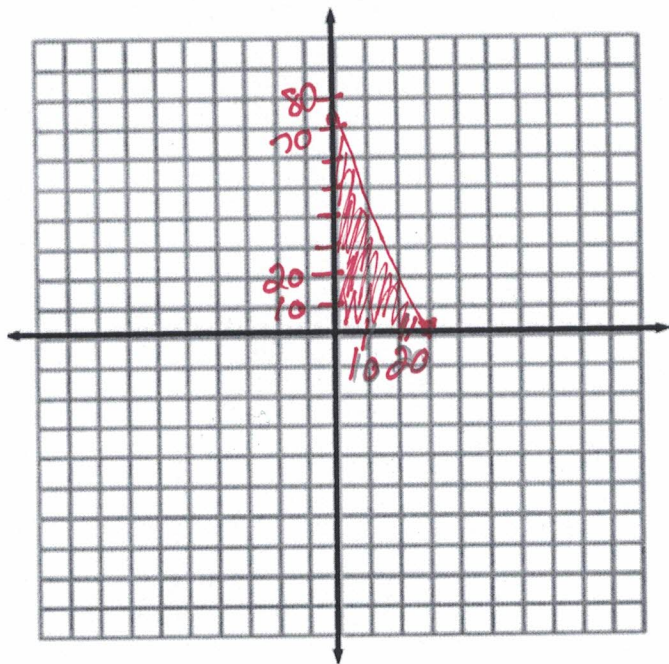


1. As part of a landscaping project, Mr. Dyer is purchasing plants from a garden center. It will cost \$38 to buy a mature tree, versus \$15 for a young one. His target is to keep the cost under \$1,100.

Let x = the number of mature trees and y = the number of young trees.

Write an inequality that represents the possible combinations of mature and young trees that are affordable. Graph the inequality.



$$38x + 15y \leq 1100$$

x	y
0	73.33
28.95	0

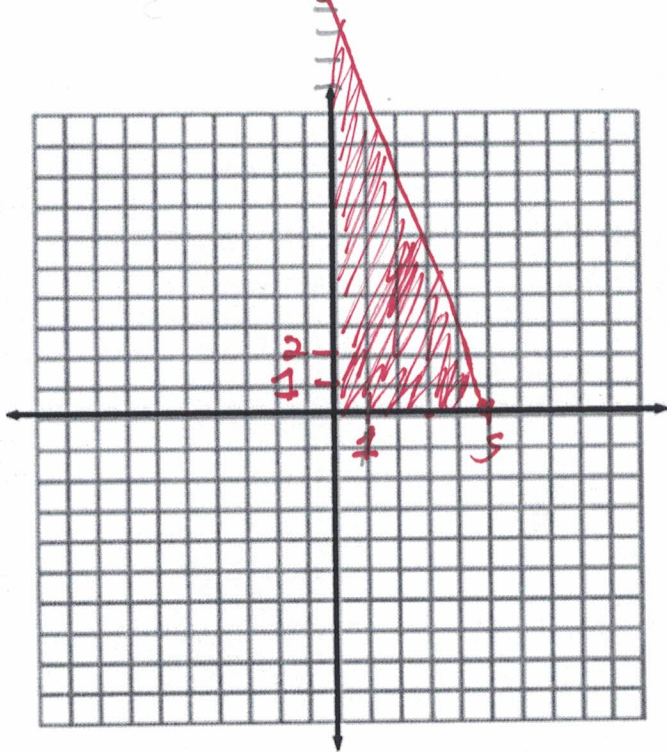
2. Mrs. Livingston took her grandchildren to a baseball game, with plans to spend no more than \$29 on snacks. An order of nachos costs \$6 and a bag of peanuts costs \$2.

Select the inequality in standard form that describes this situation. Use the given numbers and the following variables.

Let x = the number of nacho orders and y = the number of bags of peanuts.

Write an inequality that represents the possible combinations of nachos and bags of peanuts that are affordable. Graph the inequality.

$$6x + 2y \leq 29$$



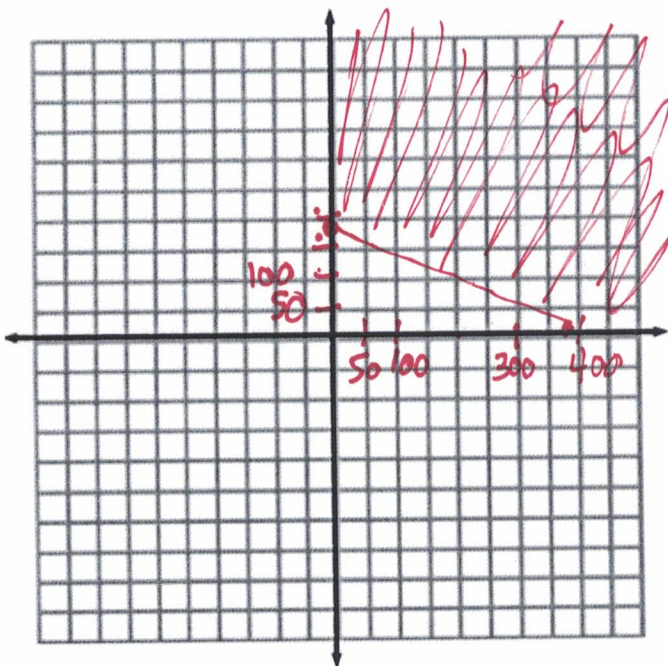
$$6x + 2y \leq 29$$

x	y
0	14.5
4.83	0

3. During the intermission of the school play, the drama class at Newberg High School is offering refreshments. The goal is to make more than \$340 in revenue tonight by selling beverages for \$1 and snacks for \$2.

Let x = the number of beverages sold and y = the number of snacks sold.

Write an inequality that represents the possible combinations of beverages and snack that are possible. Graph the inequality.



$$1x + 2y \geq 340$$

x	y
0	170
340	0

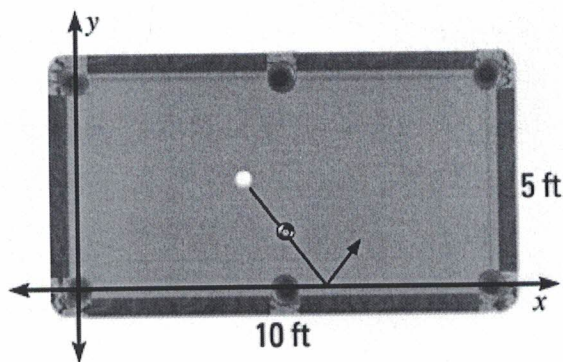
4. State 3 points that are solutions to the inequality in problem #3.

$(300, 400)$ $(400, 0)$ $(50, 300)$

5.

While playing pool, you try to shoot the eight ball into the corner pocket as shown. Imagine that a coordinate plane is placed over the pool table.

The eight ball is at $(5, \frac{5}{4})$ and the pocket you are aiming for is at $(10, 5)$. You are going to bank the ball off the side at $(6, 0)$.



a. Write an equation for the path of the ball.

b. Do you make your shot?

$$y = a|x - h| + k$$

$$y = \frac{5}{4}|x - 6|$$

$$(10, 5)(6, 0)$$

$$a = \frac{0 - 5}{6 - 10} = \frac{-5}{-4} = \frac{5}{4}$$

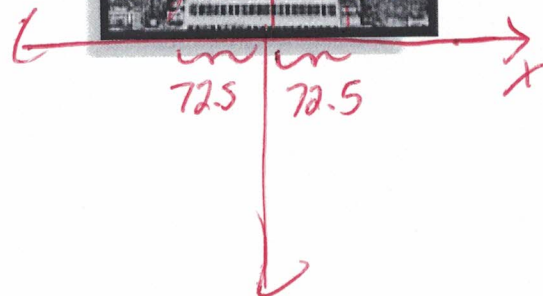
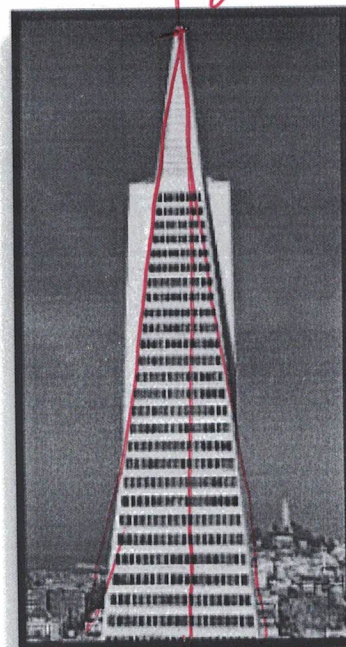
$$\frac{5}{4} = \frac{5}{4}|5 - 6|$$

$$1 = |5 - 6|$$

$$1 = |-1| \text{ true yes!}$$

6.

TRANSAMERICA PYRAMID The Transamerica Pyramid, shown at the right, is an office building in San Francisco. It stands 853 feet tall and is 145 feet wide at its base. Imagine that a coordinate plane is placed over a side of the building. In the coordinate plane, each unit represents one foot, and the origin is at the center of the building's base. Write an absolute value function whose graph is the V-shaped outline of the sides of the building, ignoring the "shoulders" of the building.



$$\text{vertex } (0, 853)$$

$$\text{slope} = \frac{-853}{72.5} = -\frac{1706}{145}$$

$$\approx -11.7655$$

$$y = -\frac{853}{72.5}|x| + 853$$