SAT Workbook: 3.2: 1, 7

1. The admission to a carnival is \$5.00. Each ride is \$0.40. You can spend no more than \$12. Write and solve an inequality to find the number of rides you can go on.

2. Graph $2x - y > 2$ in the coordinate plane.

FCAT:

Tickets for the school play cost \$7 for parents and \$3 for students. The box office receipts for the 120 tickets sold were \$480.

Part A Write a system of two equations that could be used to find the number of parent and student tickets sold. Let x represent the number of parent tickets sold, and y represent the number of student tickets sold.

Part B Solve the system of equations for x and y to determine the number of parent and student tickets sold.

1. ***Multiple Choice*** Which ordered pair is a solution of the following system of linear equations?

$$x + 2y = -1$$

$$2x - y = 13$$

Ⓐ (5, 3) Ⓑ (−3, −5)

Ⓒ (5, −3) Ⓓ (−5, 3)

Ⓔ (3, 5)

7. ***Multiple Choice*** You sold 52 boxes of candy for your marching band fundraiser. The large size box costs \$3.50 each and the small size box costs \$1.75 each. If you sold \$112.00 worth of candy, how many boxes of each size did you sell?

(A) 9 large boxes and 43 small boxes

(B) 10 large boxes and 42 small boxes

(C) 11 large boxes and 41 small boxes

(D) 12 large boxes and 40 small boxes

(E) 13 large boxes and 39 small boxes

$* \; 52 = l + s$

$112 = 3.5l + 1.75s$

$* \; 11200 = 350l + 175s$

Graph the system: $x - 2y \leq 3$

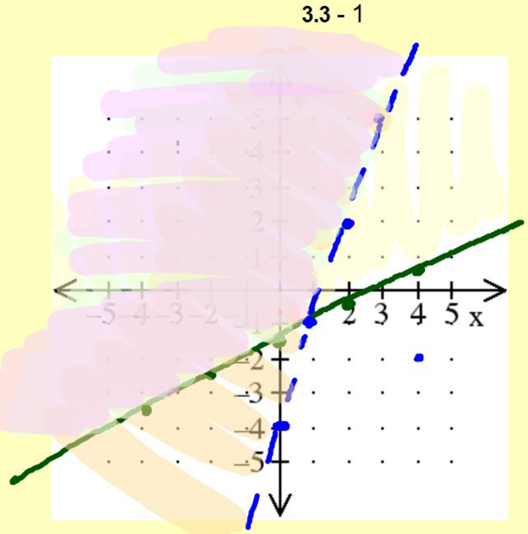
$y > 3x - 4$

$-2 \overset{?}{>} 3(4) - 4$

$-2 \not> 8$

$-2y \leq -x + 3$

$y \geq \frac{1}{2}x - \frac{3}{2}$



KEY CONCEPT — *For Your Notebook*

Graphing a System of Linear Inequalities

To graph a system of linear inequalities, follow these steps:

STEP 1 **Graph** each inequality in the system. You may want to use colored pencils to distinguish the different half-planes.

STEP 2 **Identify** the region that is common to all the graphs of the inequalities. This region is the graph of the system. If you used colored pencils, the graph of the system is the region that has been shaded with every color.

objective function

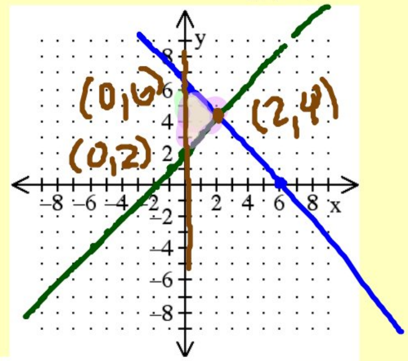
Find the minimum value and the maximum value of $C = 2x - y$ subject to the following constraints:

$x \geq 0$

$y \geq x + 2$

$y \leq -x + 6$

point	$\downarrow$	
(0,6)	C = -6	min
(0,2)	C = -2	
(2,4)	C = 4-4 = 0	max

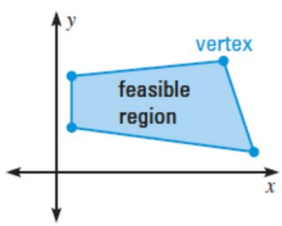


KEY CONCEPT

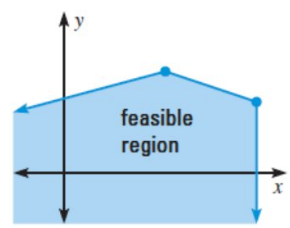
For Your Notebook

Optimal Solution of a Linear Programming Problem

If the feasible region for a linear programming problem is bounded, then the objective function has both a maximum value and a minimum value on the region. Moreover, the maximum and minimum values each occur at a vertex of the feasible region.



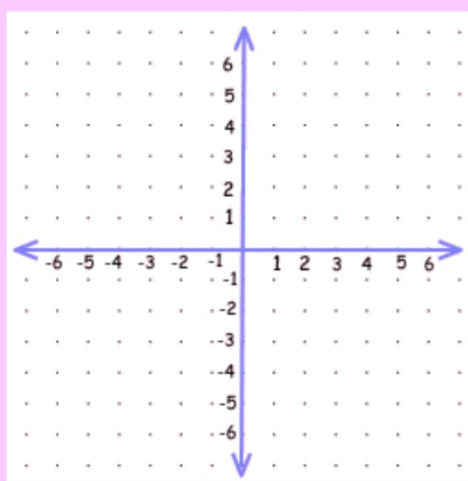
Bounded region



Unbounded region

Homework: 3.3 pg 183: 19, 25, 33

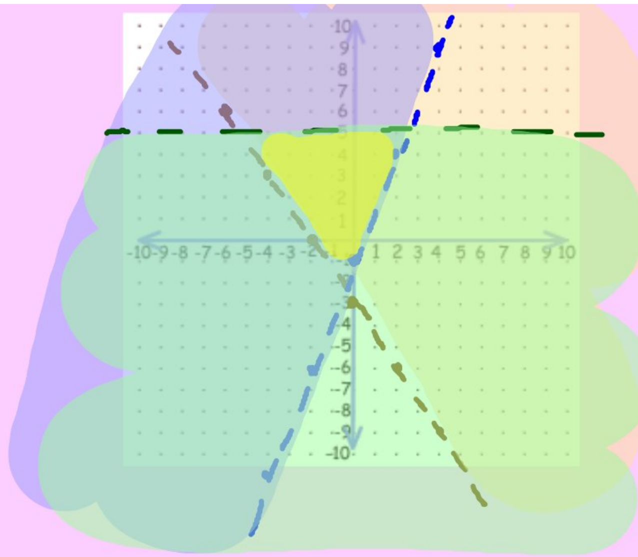
3.4 pg 190: 11-15 odd



19. $3x+2y>-6$

$2y>-3x-6$

$y>-\frac{3}{2}x-3$



$-5x+2y>-2$

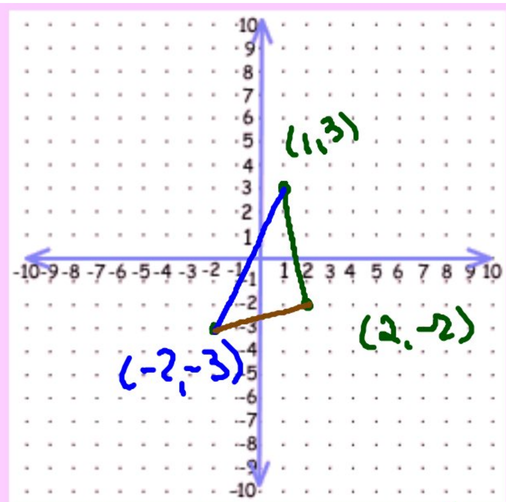
$2y>5x-2$

$y>\frac{5}{2}x-1$

$y<5$

33.

$$\boxed{\begin{array}{l} y\le -5x+8 \\ y\le 2x+1 \\ y\ge \frac{1}{4}x-\frac{5}{2} \end{array}}$$



$y+3=2(x+2)$

$y=2x+4-3$

$y=2x+1$

$y+3=\frac{1}{4}(x+2)$

$y=\frac{1}{4}x+\frac{1}{2}-3$

$y=\frac{1}{4}x-2.5$

$y-3=-5(x-1)$

$y=-5x+5+3$

$y=-5x+8$