Bell Work

$$4x - 3y = -14$$

1. Solve and show all work. $$5x + y = -27$$

2. What is the vertex of the absolute value function $y = |3x - 9| + 2$?

3. Is (6, -2) a solution for $8x - 3y < 46$?

4. What is the domain in interval notation of the constant function?

Bobbi can work at most 20 hours next week, but she needs to earn at least $150. Her dog-walking job pays $6 per hour and her job as a car wash attendant pays $10 per hour. How can she earn $150?
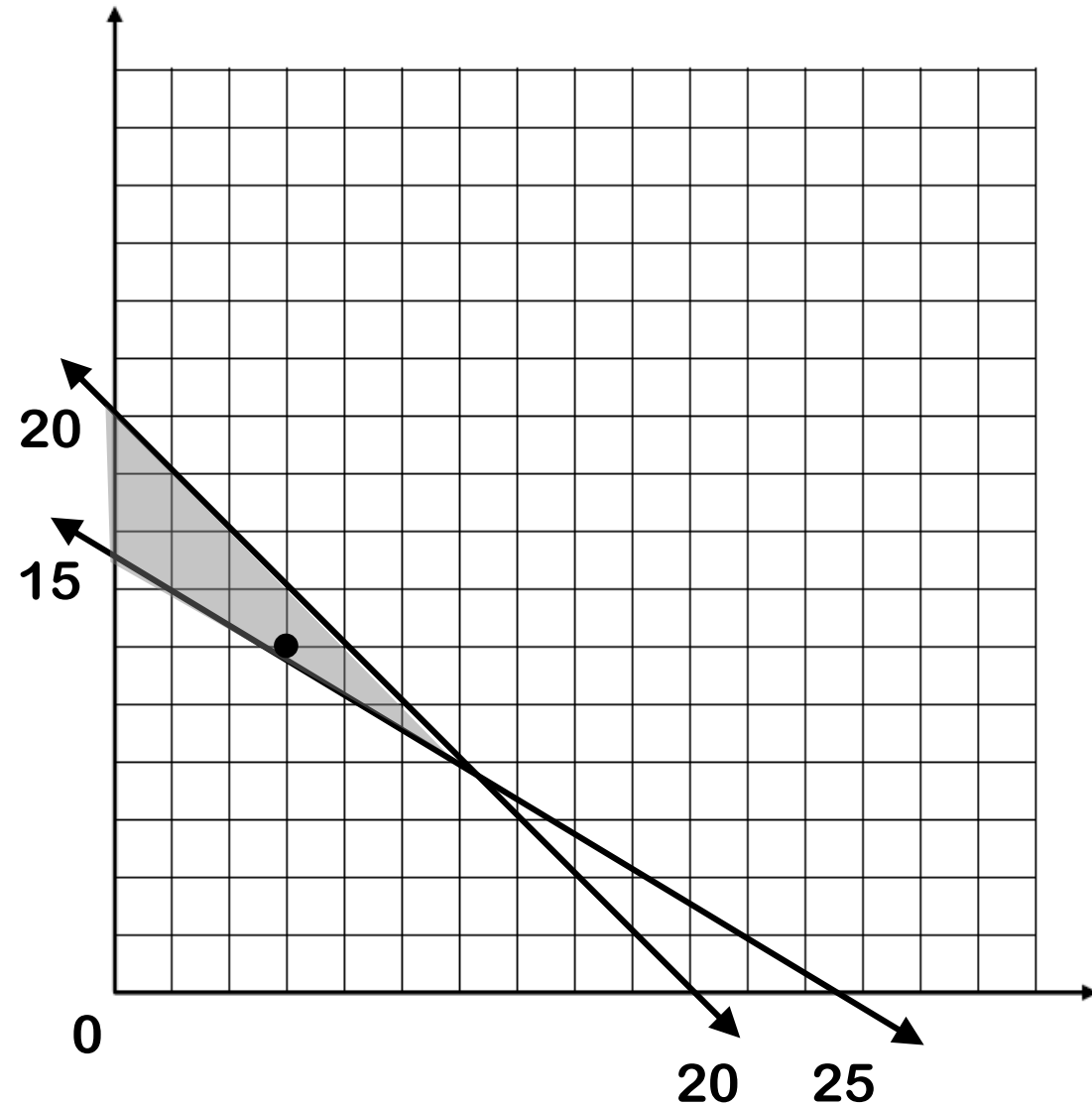
x: hours dog-walking
y: hours washing cars

Graph using 2 points.

$$x + y \leq 20 \qquad \text{(20, 0)} \qquad \text{(0, 20)}$$

$$6x + 10y \geq 150 \qquad \text{(25, 0)} \qquad \text{(0, 15)}$$

Any point inside the shaded area. One answer would be…

Bobbi can work 6 hours walking dogs and 12 hours washing cars.

20

15

0

20   25

Jerry is buying some bushes that cost $15 each and soil which costs $6 per bag for his yard. He needs at least 4 bushes, but can't spend more than $100. What can Jerry buy?
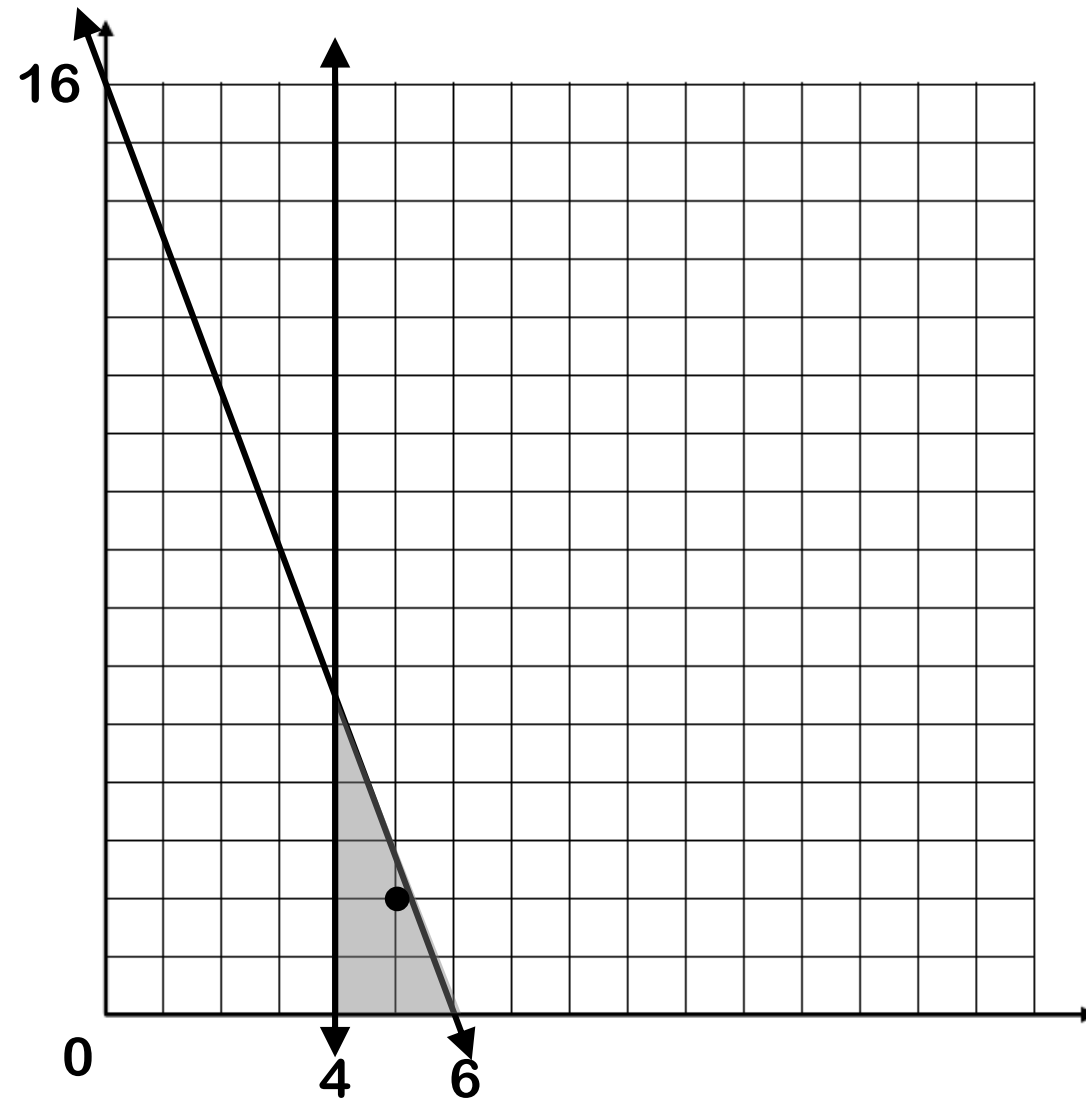
x: bushes

y: bags of soil

$x \geq 4$ (4, 0)

$15x + 6y \leq 100$ (6, 0)   (0, 16)

Round down to whole numbers.

Jerry can 5 bushes and 2 bags of soil.

The Math Club is having a school dance. Tickets for the dance are $7 in advance and $10 at the door. The cafeteria can only hold 200 people. They estimate that they must earn at least $1500. How many tickets can they sell?
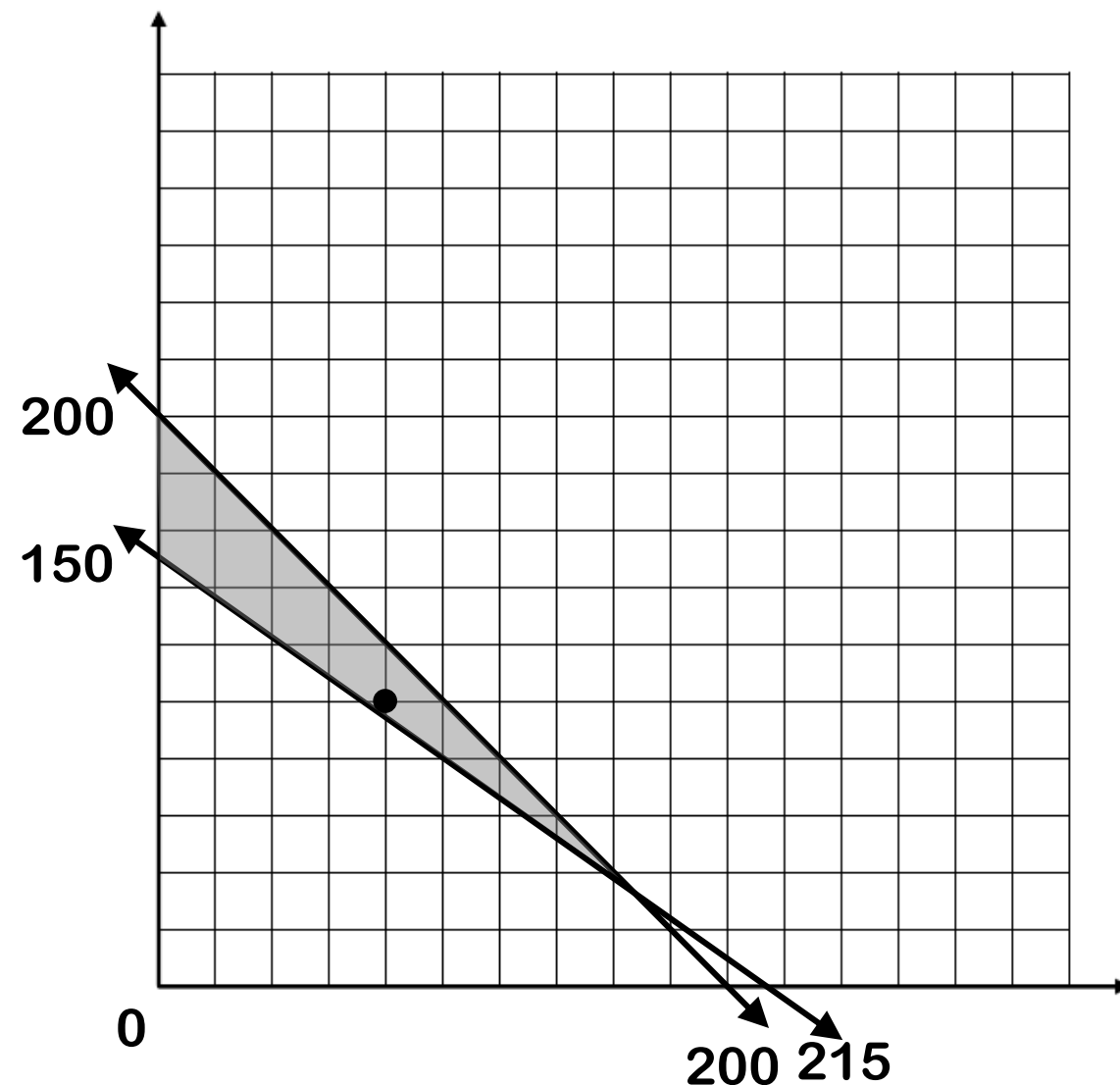
x: in advance

y: at the door

$$x + y \leq 200 \qquad (200,\ 0) \quad (0,\ 200)$$

$$7x + 10y \geq 1500 \qquad (258,\ 0) \quad (0,\ 150)$$

Round up to a whole number.

They can sell 80 advance tickets and 100 at the door tickets.

200

150

0

200 215

Assignment:

Systems of Linear Inequalities: Word Problems Worksheet