

**Do Now: Solve for the indicated variable.** 28MAY14

### Perimeter of a Rectangle

Solve for L:  $P = 2L + 2W$

### Area of a Triangle

Solve for h:  $A = \frac{1}{2}bh$

Solve the equation  $3n + 4m = 9$  for m.

### Perimeter of a Rectangle

Solve for  $L$ :  $P = 2L + 2W$

$$\begin{array}{r} -2W \quad -2W \\ P - 2W = 2L \\ \hline \frac{P - 2W}{2} = \frac{2L}{2} \end{array}$$

$$L = \frac{P - 2W}{2}$$

### Area of a Triangle

Solve for  $h$ :  $A = \frac{1}{2}bh$

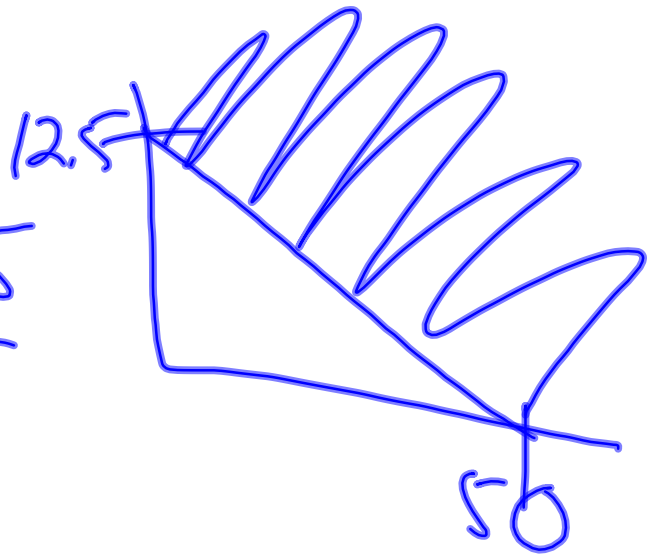
$$h = \frac{2A}{b}$$

Solve the equation  $3n + 4m = 9$  for  $m$ .

$$m = \frac{9 - 3n}{4}$$

$$x + 4y \geq 50$$

$x$	$y$
0	12.5
50	0



$$A = \frac{1}{2} b h \quad \text{for } h$$

$\cdot 2 \quad \cdot 2 \quad \text{MPE}$

$$2A = bh$$

$\div b \quad \div b \quad \text{DPE}$

$$\boxed{\frac{2A}{b} = h}$$

## 5.2

## Limiting Carbon Dioxide Emissions

Vince finds out that his family's car emits an average of 0.75 pounds of carbon dioxide ( $\text{CO}_2$ ) per mile. The SUV emits an average of 1.25 pounds of  $\text{CO}_2$  per mile.



## Getting Ready for Problem 5.2

- Suppose Vince's family wants to limit  $\text{CO}_2$  emissions from their car to at most 600 pounds per month. How many miles could they drive their car?
- Suppose Vince's family wants to limit  $\text{CO}_2$  emissions from their SUV to at most 600 pounds per month. How many miles could they drive their SUV?
- Suppose they want to limit the total  $\text{CO}_2$  emissions from *both* vehicles to at most 600 pounds per month. What are some (*car miles, SUV miles*) pairs that allow them to meet this condition?

## Problem 5.2 Solving Linear Inequalities by Graphing

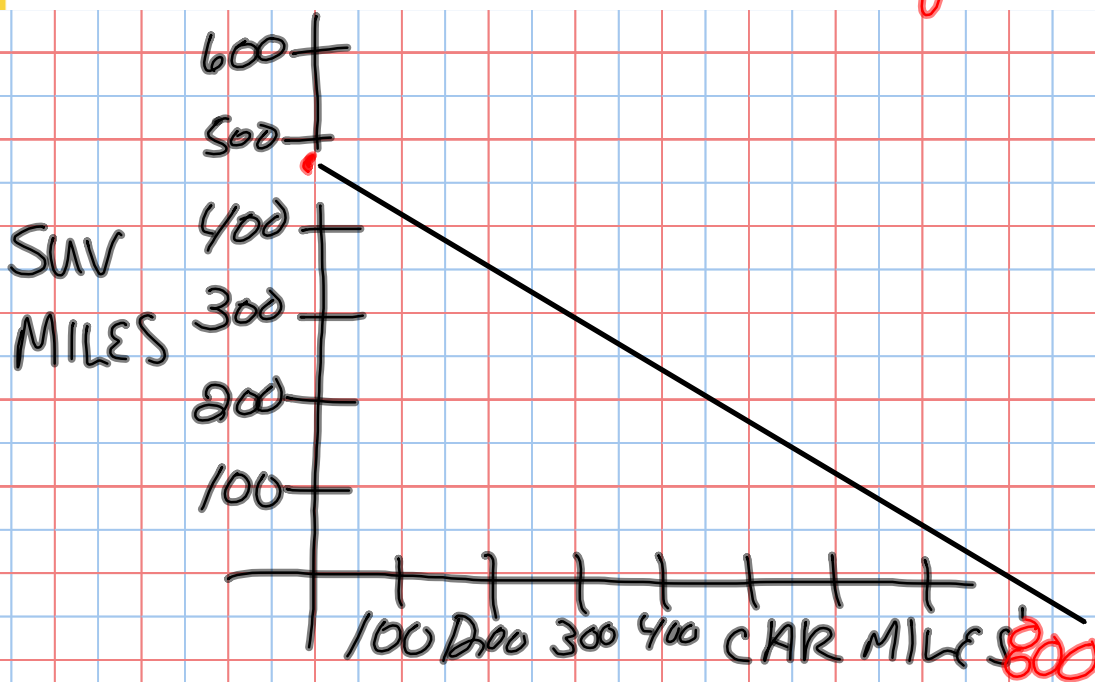
A. Suppose Vince's family wants their total CO<sub>2</sub> emissions to be *exactly* 600 pounds per month.

1. Give six examples of  $(x, y)$  *(car miles, SUV miles)* that give exactly 600 pounds of CO<sub>2</sub> emissions per month.  $(800, 0); (0, 480); (730, 30)$

2. Write an equation to model this condition.

3. Graph your equation.

$$0.75x + 1.25y = 600$$



- B.** Suppose the family wants to limit their total  $\text{CO}_2$  emissions to *at most* 600 pounds per month.
1. Write an inequality that describes the possibilities for the miles they can drive their car if they do not drive their SUV at all.
  2. Write an inequality that describes the possibilities for the miles they can drive their SUV if they do not drive their car at all.
  3. Write an inequality that describes the possibilities for how many miles they can drive their car *and* their SUV.
  4. Draw a graph displaying (*car miles*, *SUV miles*) pairs that satisfy the inequality you wrote in Question B, part (3).
  5. Describe the region of the graph that includes all points that represent a total of no more than 600 pounds of  $\text{CO}_2$  emissions.

