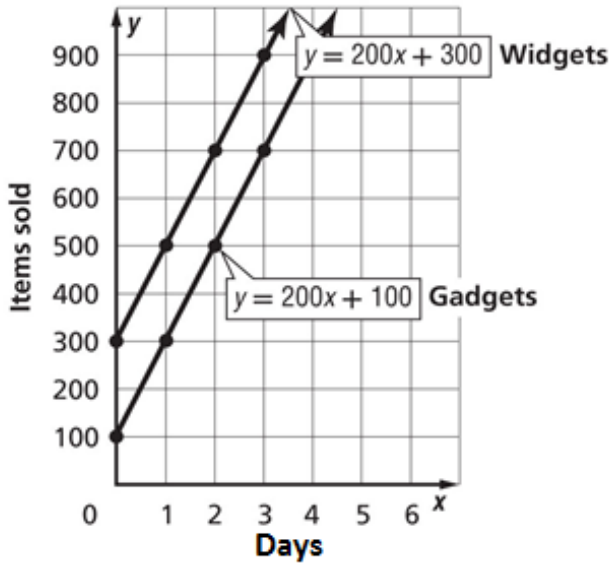


# 6-1 Word Problem Practice

## Graphing Systems of Equations

**1. BUSINESS** The widget factory will sell a total of  $y$  widgets after  $x$  days according to the equation  $y = 200x + 300$ . The gadget factory will sell  $y$  gadgets after  $x$  days according to the equation  $y = 200x + 100$ . Look at the graph of the system of equations and determine whether it has *no* solution, *one* solution, or *infinitely many* solutions.



**2. ARCHITECTURE** An office building has two elevators. One elevator starts out on the 4th floor, 35 feet above the ground, and is descending at a rate of 2.2 feet per second. The other elevator starts out at ground level and is rising at a rate of 1.7 feet per second. Write a system of equations to represent the situation.

**3. FITNESS** Olivia and her brother William had a bicycle race. Olivia rode at a speed of 20 feet per second while William rode at a speed of 15 feet per second. To be fair, Olivia decided to give William a 150-foot head start. The race ended in a tie. How far away was the finish line from where Olivia started?

**4. AVIATION** Two planes are in flight near a local airport. One plane is at an altitude of 1000 meters and is ascending at a rate of 400 meters per minute. The second plane is at an altitude of 5900 meters and is descending at a rate of 300 meters per minute.

a. Write a system of equations that represents the altitude of each plane

b. Make a graph that represents the altitude of each plane.

