

Module 4 Lesson 2 Assignment

Solve each system of equations by substitution. Show all of your work.

- 1) Balloon 1 is ten meters above the ground and rising at 16 meters per minute. Balloon 2 is five meters above the ground and rising 48 meters every three minutes. In how many minutes will the balloons be at the same height? How high will the balloons be at that time?

- 2) Maria and Amanda each improved their yards by planting rose bushes and geraniums. They bought their supplies from the same store. Maria spent \$93 on 5 rose bushes and 7 geraniums. Amanda spent \$204 on 13 rose bushes and 14 geraniums. What is the cost of one rose bush and the cost of one geranium?

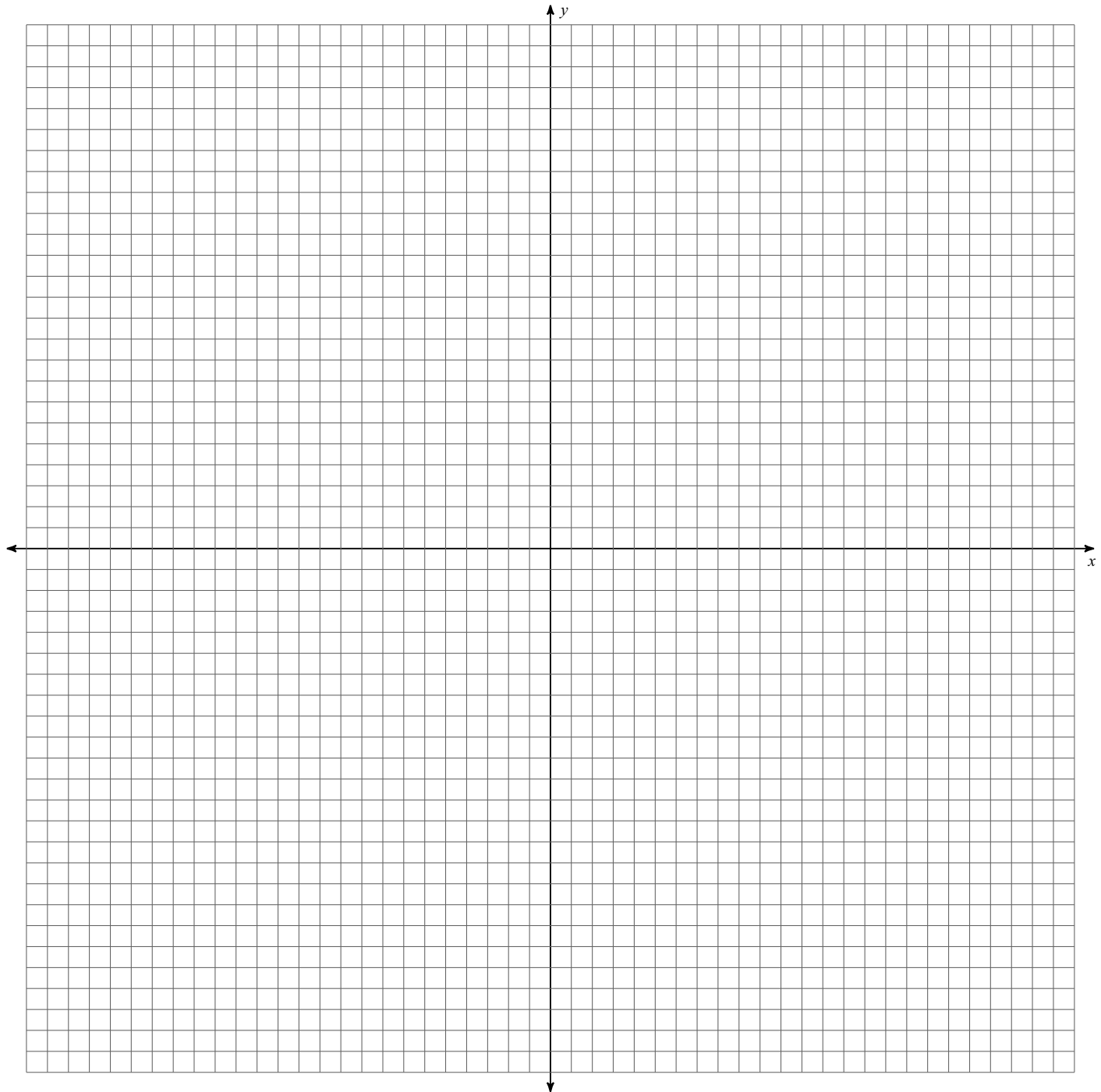
- 3) A boat traveled 175 kilometers each way downstream and back. The trip downstream took 7 hours. The trip back took 25 hours. What is the speed of the boat in still water? What is the speed of the current?

- 4) Two boats are traveling in the same direction. One boat starts 175 miles from its destination and travels at 25 miles per hour. The other boat is 50 miles from its destination after 5 hours and reaches its destination 2 hours later. When are the boats the same distance from their destination? What is that distance?

- 5) The senior classes at High School A and High School B planned separate trips to Yellowstone National Park. The senior class at High School A rented and filled 10 vans and 2 buses with 194 students. High School B rented and filled 7 vans and 7 buses with 315 students. Every van had the same number of students in it as did the buses. Find the number of students in each van and in each bus.

Write two equations to represent the situation. Graph the lines represented by the equation. Show a table of values for each line you draw. Explain the meaning of the x and y axes. Then solve the system using substitution. Use different colored highlighters to highlight areas where you see commonalities in between representations.

- 6) Two buses left a station at different times. When the first bus left the station, the other bus was already 35 miles from the station. The first bus is traveling at 60 miles per hour. A half hour later the second bus is 62.5 miles from the station. When will the two buses be the same distance from the station? What will that distance be?



Solve each system by substitution.

$$\begin{aligned} 7) \quad & y = -6x + 3 \\ & y = -7x + 3 \end{aligned}$$

$$\begin{aligned} 8) \quad & y = -8x - 12 \\ & 7x - 2y = 1 \end{aligned}$$

$$\begin{aligned} 9) \quad & 3x - 5y = -23 \\ & y = 1 \end{aligned}$$

$$\begin{aligned} 10) \quad & x - 2y = -11 \\ & -3x + 6y = 33 \end{aligned}$$