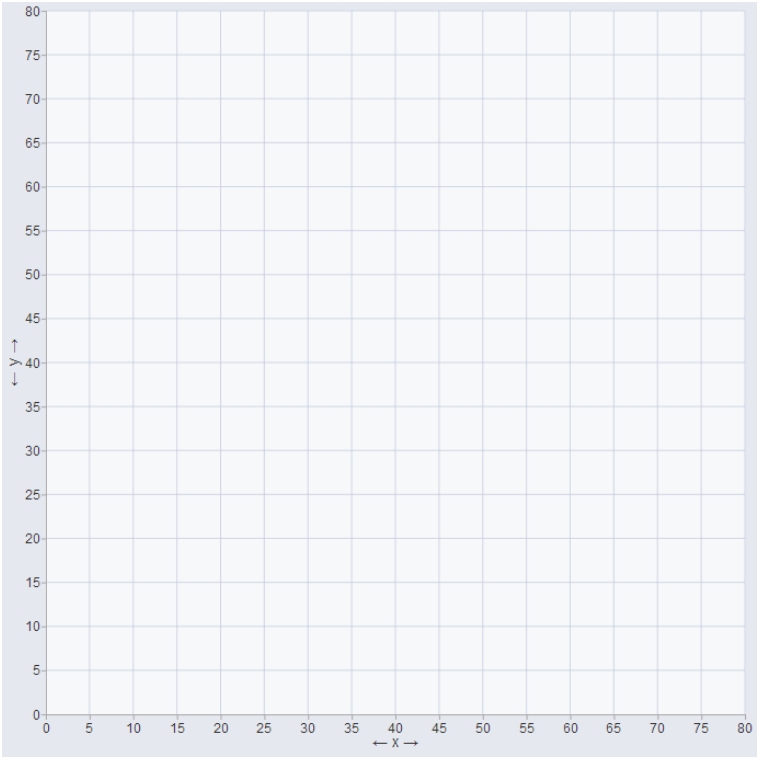
Name_____ Systems of Equations Word Problems Part 1
Date_____ Check-In Activity

1. To conduct a scientific experiment, students need to mix 90 milliliters of a 3% acid solution. They have a 1% and a 10% solution available. How many milliliters of the 1% solution and of the 10% solution should be combined to produce 90 milliliters of the 3% solution?

a) Define your variables.

b) Write two equations to model the given situation.

c) Graph your equations on the given x-y axes.



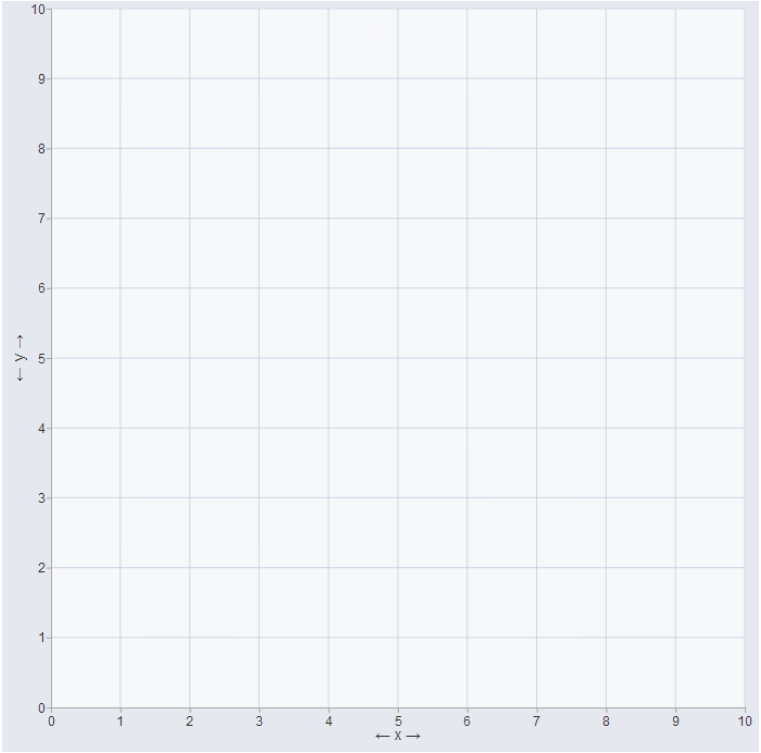
d) How many milliliters of the 1% solution and of the 10% solution should be combined to produce 90 milliliters of 3% solution?

2. A two digit number whose tens digit is 2 more than the units digit is 3 more than 6 times the sum of its digits. Find the original number.

a) Define your variables.

b) Write two equations to model the given situation.

c) Graph your equations on the given x-y axes.



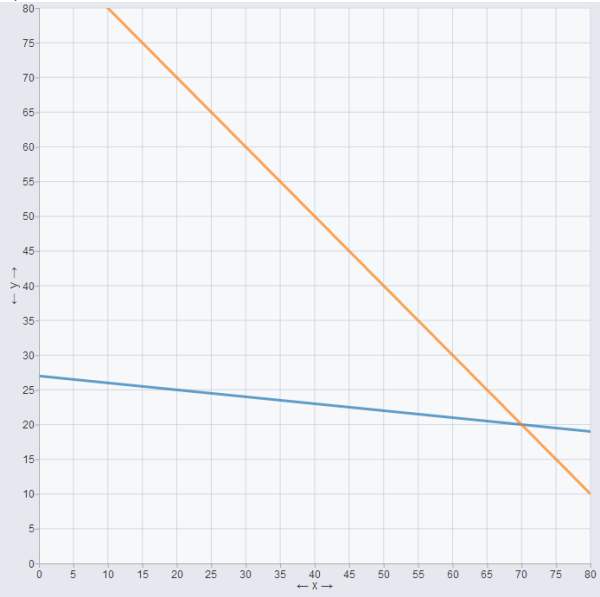
d) What is the original number?

Answer Key:

1. a) Let x be mL of 1% acid solution.
Let y be mL of 10% acid solution.

b) $\begin{cases} 0.01x + 0.1y = 2.7 \\ x + y = 90 \end{cases}$

c)

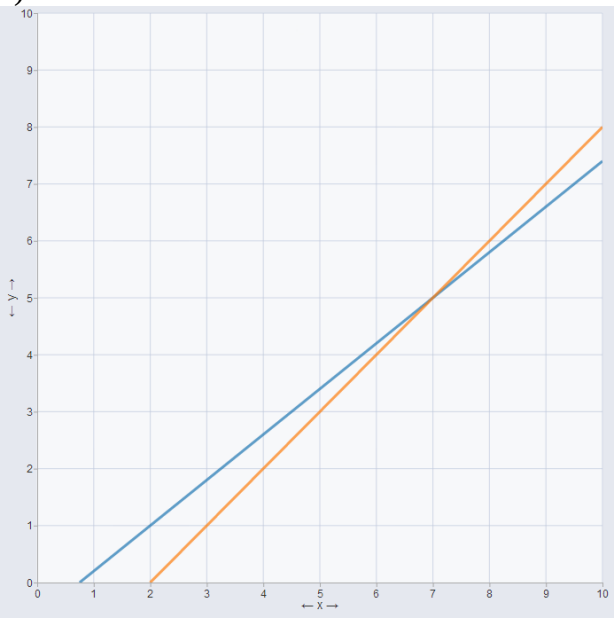


d) 20 mL of 10% solution and 70 mL of 1% solution.

2. a) Let x by the tens digit of the number.
Let y be the ones digit of the number.

b) $\begin{cases} x = y + 2 \\ 3 + 6(x + y) = 10x + y \end{cases}$

c)



d) 75