Tajima HS | Solis | IM1

CH. 6 System of Equations – RETEACH – EXIT SLIP

Name Exemplar PER____ DATE_____

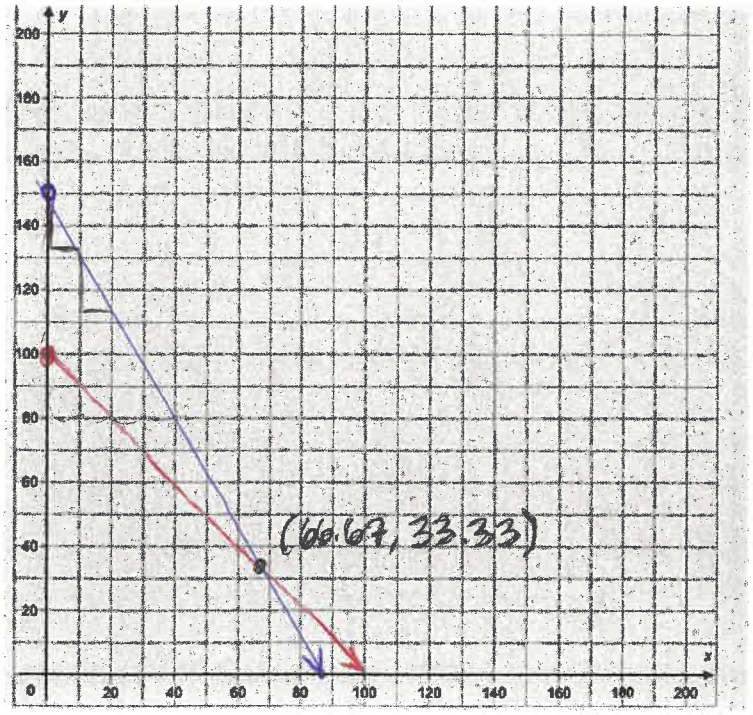
A dairy produces whole milk with 3.5% fat and low-fat milk with 2% fat. The dairy has received a request for 100 gallons of milk with 3% fat. The system of equations below can be solved for x, the number of gallons of whole milk, and y, the number of gallons of low-fat milk, that can be mixed to make 100 gallons of 3% milk.

$$\begin{cases} x + y = 100 \\ 3.5x + 2y = 3(100) \end{cases}$$

x = # of gallons of whole milk

y = # of gallons of low-fat milk

a.) Graph the solution to this system of equations. First graph the two lines. Then plot a point to show the solution to the system of equations.



$x + y = 100$

$-x \quad -x$

$y = 100 - x$ (slope = -1; starting point)

$3.5x + 2y = 300$

$-3.5x \quad -3.5x$

$\frac{2y}{2} = \frac{-3.5x}{2} + \frac{300}{2}$

$y = -1.75x + 150$ (slope; starting point)

b.) Solve the system of equations above using a method OTHER than graphing. Show that work in the space below.

$-2(x + y = 100)$

$-2x - 2y = -200$

$3.5x + 2y = 300$

$\frac{1.5x}{1.5} = \frac{100}{1.5}$

$x = 66.67$

$x + y = 100$

$66.67 + y = 100$

$-66.67 \quad -66.67$

$y = 33.33$

The dairy will need to produce 66.67 gallons of whole milk and 33.33 gallons of low fat milk.