

How many solutions does the system of linear equations have?

$$y = x - 3$$

$$y = -x + 1$$

For $y = x - 3$, the slope is 1.

For $y = -x + 1$, the slope is -1 .

Because the slopes are different, the equations represent lines that intersect at one point. So the system has one solution.

At a farmers' market, Karen and Alice each bought some bread that cost \$2 per loaf. Then Karen spent \$3 to purchase other items, while Alice spent \$1. Could the girls have bought the same number of loaves of bread and spent the same total amount?

1. Let x represent the number of loaves of bread. Fill in the boxes to write a system of equations for the total amounts spent.

Karen: $y = \square x + \square$

Alice: $y = \square x + \square$

2. What are the slopes of the lines represented by the equations?
3. What are the y -intercepts of the lines represented by the equations?
4. Do the lines intersect?
5. How many solutions are there to this system of equations?
6. Can Karen and Alice have bought the same number of loaves of bread and spent the same total amount?

On the Back!

7. How many solutions does the system of linear equations have?

$$y = 6x + 4$$

$$y = 3x - 2$$