

Answer on Question #64843 – Math – Algebra

Question

Mariana and Reena go to local ice cream shop. Ice cream sundaes cost 2\$ and banana splits cost 3\$. They buy 6 more banana split than sundaes and spent a total of 28\$. Define variables and write system of equation representing the information.

Solution

We denote by x amount of ice cream sundaes and by y amount of banana splits. Then $y-x=6$ and $2x+3y=28$.

The system of equations has the form

$$\begin{cases} y - x = 6, \\ 2x + 3y = 28. \end{cases}$$

It follows from the first equation that

$$y = x + 6.$$

Substituting for y into the second equation of the system

$$2x + 3(x + 6) = 28,$$

$$2x + 3x + 18 = 28,$$

$$5x = 28 - 18,$$

$$5x = 10,$$

$$x = 2.$$

Then

$$y = x + 6 = 2 + 6 = 8.$$

Answer:

x is amount of ice cream sundaes,

y is amount of banana splits.

$$\begin{cases} y - x = 6, \\ 2x + 3y = 28. \end{cases}$$

Solution of the system is $x=2$, $y=6$.