Task:

ABC copy center charges $0.12 per black/white copy and $0.49 per color copy. Jerry ordered 54 copies - a mix of black/white and color copies. If the total cost of his copies was $14.25, how many of each type of copy did he order?

Solution:

Let Jerry ordered x black/white copies and y color copies. So total cost of his copies was $0.12 \cdot x + 0.49 \cdot y = 14.25$ and there ware $x + y = 54$ copies.

We get the equation: $\begin{cases} 0.12 \cdot x + 0.49 \cdot y = 14.25 \\ x + y = 54 \end{cases}$

Solve it: $\begin{cases} 0.12 \cdot x + 0.49 \cdot y = 14.25 \\ x + y = 54 \end{cases}$ $\begin{cases} 0.12 \cdot x + 0.49y = 14.25 \\ x = 54 - \mathrm{y} \end{cases}$ $\begin{cases} 0.12(54 - \mathrm{y}) + 0.49y = 14.25 \\ x = 54 - \mathrm{y} \end{cases}$

$\begin{cases} 6.48 - 0.12\mathrm{y} + 0.49y = 14.25 \\ x = 54 - \mathrm{y} \end{cases}$ $\begin{cases} 0.37y = 14.25 - 6.48 \\ x = 54 - \mathrm{y} \end{cases}$ $\begin{cases} 0.37y = 7.77 \\ x = 54 - \mathrm{y} \end{cases}$ $\begin{cases} y = 21 \\ x = 54 - 21 \end{cases}$ $\begin{cases} y = 21 \\ x = 33 \end{cases}$

Answer: 33 of black/white and 21 color copies.