We've noticed some mistakes, so it was necessary to make some changes.

The Royal Fruit Company produces two types of fruit drinks. The first type is x % pure fruit juice, and the second type is y % pure fruit juice. The company is attempting to produce a fruit drink that contains z % pure fruit juice. How many pints of each of the two existing types of drink must be used to make 100 pints of a mixture that is z % pure fruit juice?

Solution.

Let a = pints of x % fruit juice to be mixed

Then $100 - a$ = pints of y % fruit juice to be mixed

We have an equation:

$$a \cdot x\% + (100 - a) \cdot y\% = 100 \cdot z\%$$

Let's find a:

$$a \cdot 0.01x + (100 - a) \cdot 0.01y = z$$

$$0.01x \cdot a + y - 0.01y \cdot a = z$$

$$a \cdot (0.01x - 0.01y) = z - y$$

$$a = \frac{z - y}{0.01x - 0.01y} = \frac{100(z - y)}{x - y}$$

Then

$$100 - a = 100 \cdot \left(1 - \frac{z - y}{x - y}\right)$$

Answer:

$\dfrac{100(z - y)}{x - y}$ pints of x % fruit juice must be used;

$100 \cdot \left(1 - \dfrac{z - y}{x - y}\right)$ pints of y % fruit juice must be used.

If we know x, y, z, we can find the answer in numbers.