Question #28453

In a shop, Monica buys 3 newspapers and 2 magazines, Jennie buys 2 newspapers and 4 magazines. Monica pays £4.30 and Jennie pays £6.20. How much does a newspaper cost?

Solution. Let a newspaper costs x£ and a magazine costs y£. Then Monica spent $(3 \cdot x + 2 \cdot y)$£ and Jennie spent $(2 \cdot x + 4 \cdot y)$£. Thus we obtain

$$\begin{cases} 3 \cdot x + 2 \cdot y = 4.30 \\ 2 \cdot x + 4 \cdot y = 6.20 \end{cases}$$

It follows that $x - 2y = -1.9$ and $x = -1.9 + 2y$. Then the second equation implies that

$$2(-1.9 + 2y) + 4y = 6.20$$

$$8y = 10$$

$$y = 1.25$$

Hence $x = -1.9 + 2.5 = 0.6$.

Answer. A newspaper costs 0.6£.