

Answer on Question #76061 – Math – Algebra

Question

The total cost of two calculators and four math sets is R 440.00. If a calculator costs R 40 more than a math set, what is the cost of each?

Solution

Denote by X, Y the cost of a calculator and the cost of a math set respectively. Let's formulate the system of equations:

$$\begin{cases} X - Y = 40 \\ 2X + 4Y = 440 \end{cases} \Rightarrow \begin{cases} X = 40 + Y \\ 2X + 4Y = 440 \end{cases} \Rightarrow \begin{cases} X = 40 + Y \\ 2(40 + Y) + 4Y = 440 \end{cases} \Rightarrow$$

$$\begin{cases} X = 40 + Y \\ 80 + 2Y + 4Y = 440 \end{cases} \Rightarrow \begin{cases} X = 40 + Y \\ 6Y = 360 \end{cases} \Rightarrow \begin{cases} X = 40 + Y \\ Y = 60 \end{cases} \Rightarrow \begin{cases} X = 100 \\ Y = 60 \end{cases}$$

Answer: a calculator costs 100 R, a math set costs 60R.