F-IF Using Function Notation I

Task

Katy is told that the cost of producing x DVDs is given by $C(x) = 1.25x + 2500$. She is then asked to find an equation for $\dfrac{C(x)}{x}$, the average cost per DVD of producing x DVDs.

She begins her work:

$$\frac{C(x)}{x} = \frac{1.25x + 2500}{x}$$

and finishes by simplifying both sides to get:

$$C = 1.25 + \frac{2500}{x}$$

Is Katy's answer correct? Explain.