

Answer on Question #47747 – Math – Algebra

Question

A merchant marks his goods up in such a way that the profit made on selling 60 items is equal to the cost price of 45 items. What is the percentage profit made by the merchant?

Solution

Let x be the cost price of one item, y is a merchant's price of one item. Then we have a relation:

$$60(y - x) = 45x \Leftrightarrow 4y = 7x \Leftrightarrow \frac{y}{x} = \frac{7}{4}. \text{ The required value is equal to } \frac{y-x}{x} = \frac{y}{x} - 1 = \frac{7}{4} - 1 \\ = \frac{3}{4} = 0.75 = 75\%.$$

Answer. 75%.