Math Diversion 1071

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It is a capital mistake to theorize
in advance of the facts.
— Sherlock Holmes (Jeremy Brett)
[Episode *The Second Stain*]

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Source: https://www.algebra.com/algebra
Title: Question 177914
 Presenter: Patrick
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1 Problem

If a hen and a half can lay an egg and a half in a day and a half, how many eggs will six hens lay in seven days?

2 Solution

When I first read this unusual problem, I had a psychological reaction to it that stopped me for a moment. However, the problem merely poses a total as the result of a conversion factor times two quantities in the form

$$T = R\,Q_1 Q_2\,, \tag{1}$$

where R is the conversion factor (rate of exchange) and the Q's are quantities. Let's set up R first

$$R = \frac{1.5\,\text{eggs}}{(1.5\,\text{hens})(1.5\,\text{days})}\,. \tag{2}$$

Now, let's put it all together:

$$T = \frac{1.5\,\text{eggs}}{(1.5\,\text{hens})(1.5\,\text{days})}\,(6\,\text{hens})(7\,\text{days}) = 28\,\text{eggs}\,. \tag{3}$$