# Math Diversion Problem 908

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> When I found a symmetry, I felt I was
> uncovering something eternal.
> — Gabriele Veneziano

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Source:   math.unm.edu/sites/default/files/files/
    core-courses/4.95 Mixture..
Title: Counting by Feet
 Presenter: Patrick
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## 1 The Problem

In a pen at Old MacDonald's farm there are some sheep and some geese. There is a total of 115 animals, and there are 424 legs. How many sheep and how many geese are there? (97, 18)[1]

## 2 Solution

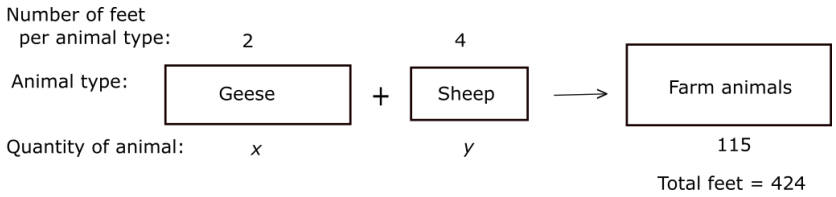


Figure 1. Standard and nonstandard information given to us.

This is a 'standard' mixed-rate problem. Let $x$ be the number of geese and $y$ be the number of sheep. The standard information given to us is in the form of a 'total equal to the sum of its parts', beginning with the numbers of geese and sheep:

$$x + y = 115\,. \tag{1a}$$

[1] Found at math.unm.edu/sites/default/files/files/core-courses/4.95 Mixture...

Then we have to balance on the number of animal feet:

$$(2)x + (4)y = 424\,. \tag{1b}$$

These two equations have the solution $x = 18$ and $y = 97$.