

Water and Wine

History and provenance

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An early related printed puzzle

Dudeney's *Amusements in Mathematics* (1917), problem 363, *The Doctor's Query*, describes transferring a small amount of spirits into an equal quantity of water and then transferring the same amount of mixture back [1]. It asks for the resulting proportion. That is a close relative of the equal-cross-contamination question on this page.

A bibliographic trap

The same book also contains a problem titled *Wine and Water*, number 367. That is a different mixing problem involving glasses of different sizes. The matching transfer operation is in number 363, not in the similarly named number 367.

The two-glass comparison is often explained by conservation of the amount of each liquid, rather than by a long fraction calculation. Changing wine to tea, coffee, or another pair of liquids does not change that principle under the usual additive-volume idealization.

The 1917 example is an early documented relative. I did not establish the inventor or first publication of the exact comparison wording.

Sources

- [1] Henry Ernest Dudeney, *Amusements in Mathematics* (1917), problem 363: The Doctor's Query.
<https://www.gutenberg.org/files/16713/16713-h/16713-h.htm>

Sources checked September 7, 2026. A documented appearance is not necessarily the earliest appearance.