

Aberdeen Scotch Whisky Consortium  
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Dear IMC:

I am a representative of the Aberdeen Scotch Whisky Consortium based in Aberdeen, Scotland. You are probably aware that Scotland is world famous for producing Scotch Whisky, an alcoholic beverage made from malted barley, yeast, and water. My organization provides resources to the large number of distilleries operating throughout Scotland.

Recently one of the local distilleries brought a problem to our attention regarding the blending of whiskies from casks. To produce cask strength whisky, this distillery sells Single Malt Scotch Whisky directly from numbered casks. However, the contents of each cask are slightly different with different levels of alcohol as well as slightly different color and flavor. The distillery blends whisky from two or more casks to insure their product has uniform characteristics including alcohol content. For instance, listed below are the cask number, type of cask, and alcohol content of three casks in the aging cellars of the distillery.

Cask Number	Type of Cask	Alcohol by Volume
3241	Hogshead	$57+0.01F$
3242	Hogshead	$58+0.01M$
3243	Barrel	$58.5+0.01L$

The values for F, M, and L are the number of letters in your first (F), middle (M) and last (L) names. Your task is to find the combination of cask 3241, cask 3242, and cask 3243 that can be blended to make a mixture with an abv of 57.5%.

To make your decision, you'll need to develop and solve a system of equations under some assumptions.

1. You'll need to use whisky from all three casks.
2. Assume that you need a total of 400 liters.

Under these assumptions, how many liters of each cask must be blended to obtain 500 liters of a 57.5 abv mixture?

You will need to create a system of two equations with three variables. One of these equations will insure that the total amount of whisky is correct. The other equation will insure that your blend is 57.5 abv. Document your work carefully since we may need to see your work or we may ask you to solve a similar problem.

The more carefully you organize your solution, the easier it will be to submit the proper documentation or to solve a similar problem. Your instructor will serve as your mathematical consultant on this problem and can answer questions that may arise. Use their expertise and the examples in this chapter to help you develop your solution strategy.

Sincerely yours,

Fergus McDonald