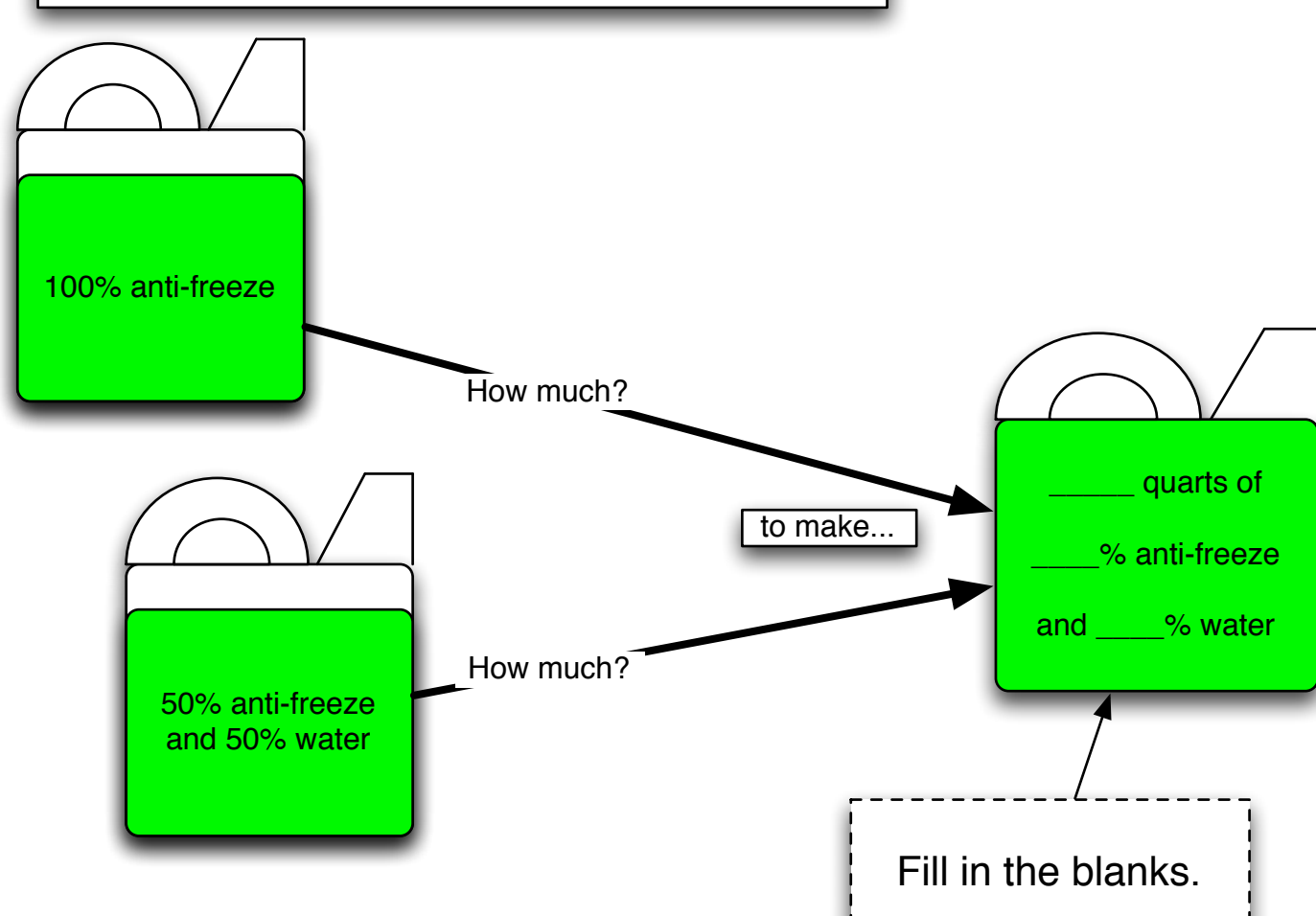


1.1

This lesson will show you how to solve a MIXTURE problem.

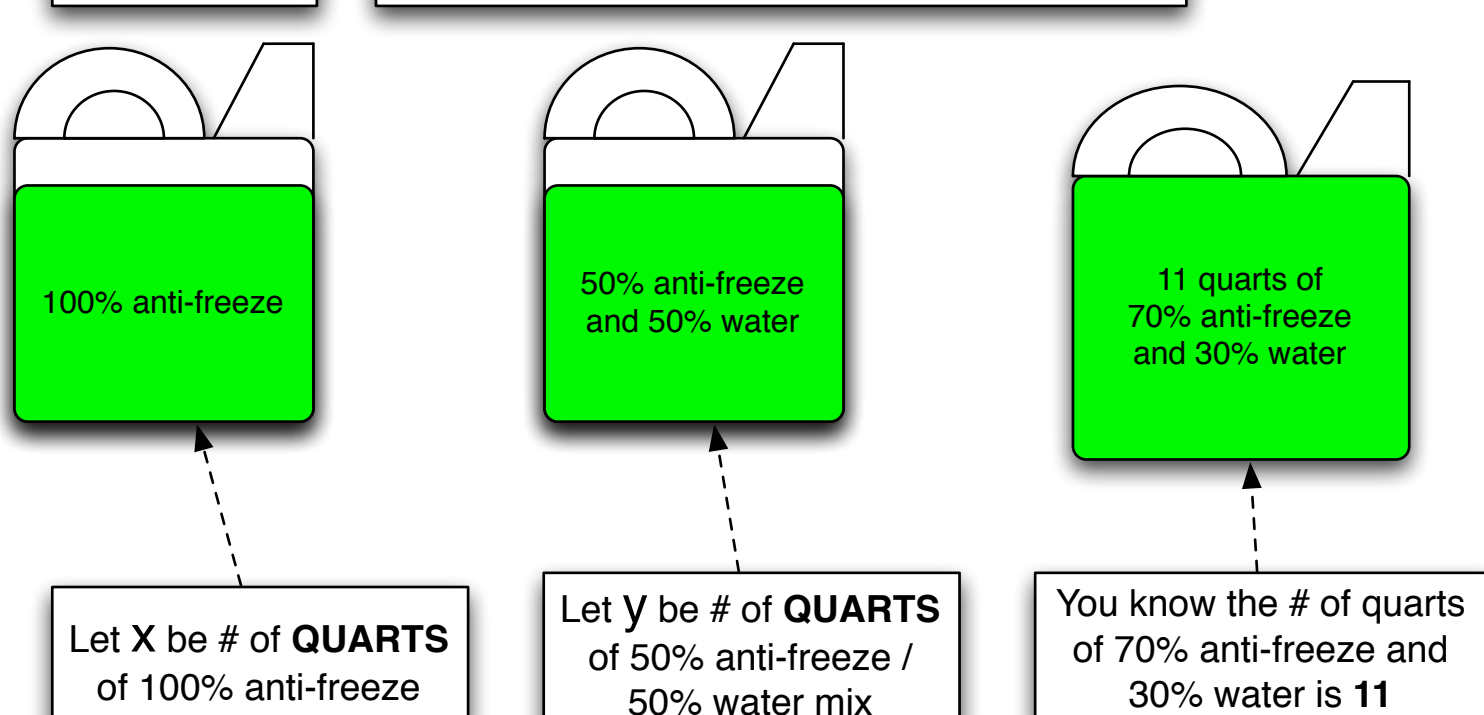
Cars needs a liquid called antifreeze for cold temperatures. Lysander has always used a mixture of 50% antifreeze and 50% water for his car, so he has a large supply of that mixture. He has recently moved to an area which is much colder than where he used to live. In his new area, he needs a 70% antifreeze and 30% water mix instead. He has bought some pure (100%) antifreeze. He wants to fill up an 11 quart container with a 70% antifreeze and 30% water mix, to get ready for the next time he needs to refill his cooling system. How many quarts of pure (100%) antifreeze and a 50% antifreeze and 50% water mix should be combined to make 11 quarts of a 70% antifreeze and 30% water mix?

FIRST figure out the situation...

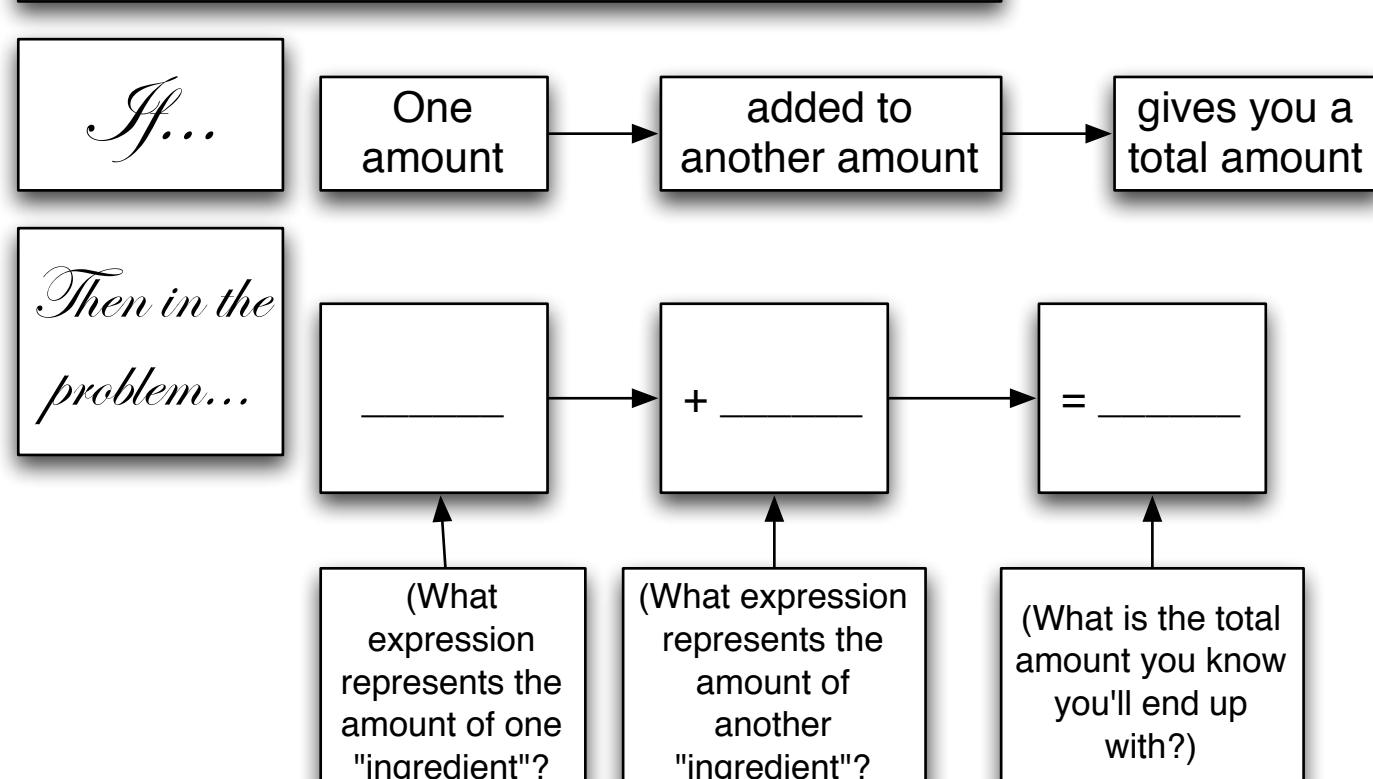


1.2

SECOND, define your variables as specific AMOUNTS (not percentages).



THIRD, find relationships between your variables and values to make equations.



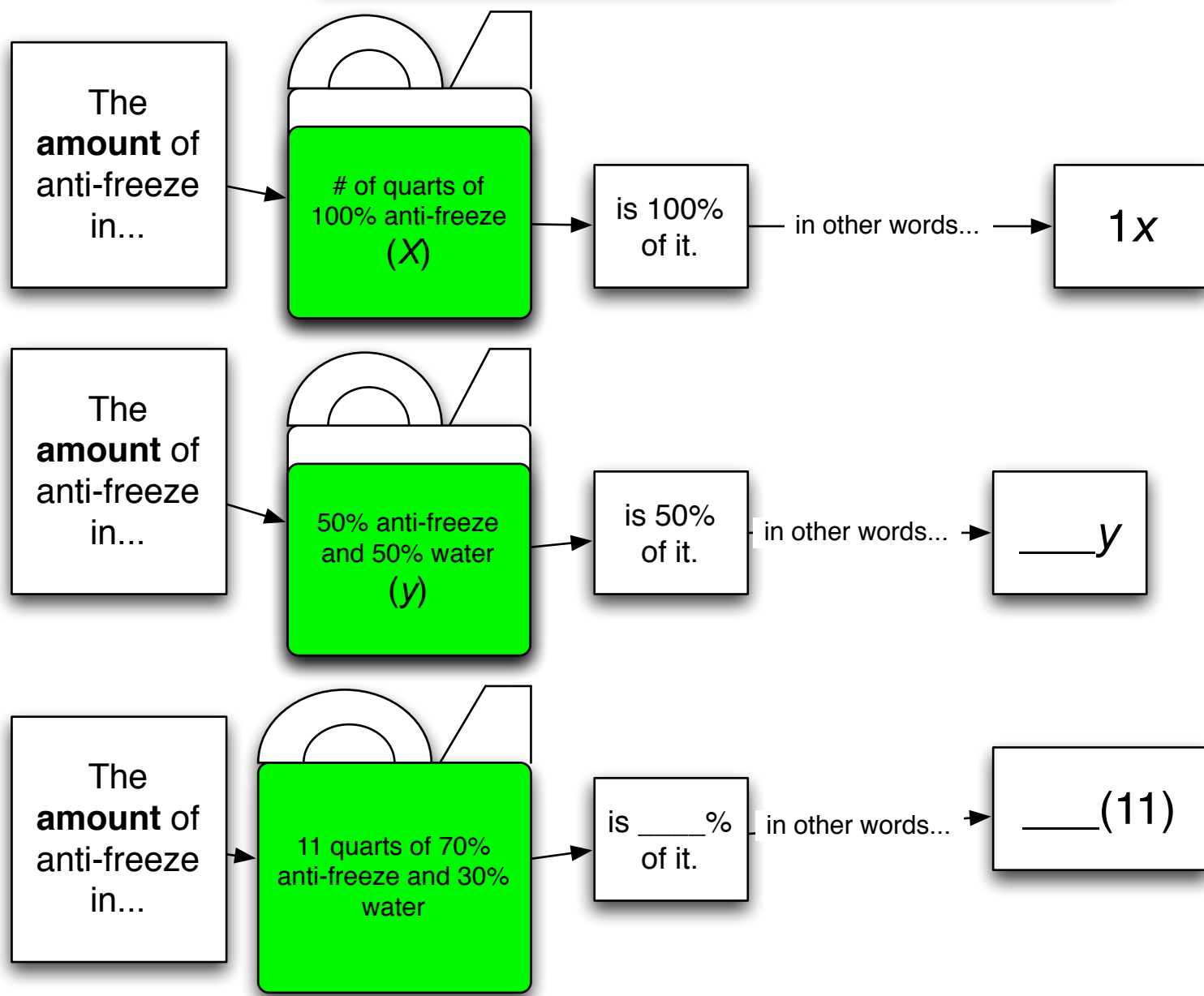
1.3

So now you have one equation...  $x + y = 11$

To have a system, you need one more...

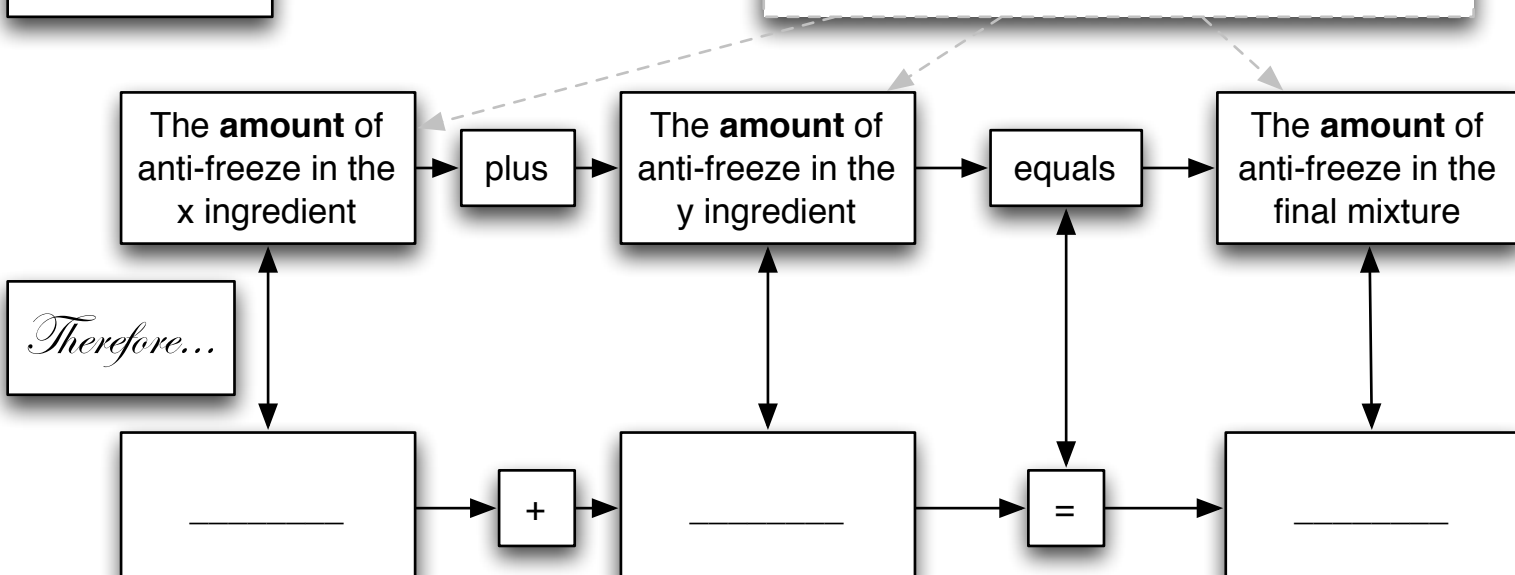
How do we use the percentages we know?

We use them to make expressions which represent AMOUNTS.



1.4

Hint: Think very carefully about which expressions in 1.3 represent these amounts



1.5

Now you have a system of equations...

$x + y = 11$

$x + 0.5y = 0.7(11)$

FINALLY, solve the system of equations to answer the question.