

NAME: _____ Score _____/10

Please **print** your name

SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION

On this quiz I will lead you through a proper way of writing a solution to a question. You are to supply the details by filling in each blank. **No computations are required or even desired.**

Problem: What quantity of a 60% acid solution must be mixed with a 30% acid solution to produce 300 mL of a 50% acid solution ?

(* and (**) should not be the same.

Analysis:

Let x be the amount (measured in milliliters) of _____ to be added.

The volume of the final mixture will be _____ mL.

The amount of acid in the final solution is _____. (*)

The amount of acid contributed by the 60% solution is _____.

The amount of the 30% solution will be _____ mL.

The amount of _____ contributed by the 30% solution is $(0.3)(300 - x)$.

The amount of acid in the final solution is _____. (**)

We now have the amount of _____ in the _____ solution written in two ways.

Therefore the mathematical model for this concentration problem is the linear equation in one variable

(Insert the Model/equation here) _____

Solution: (I have solved the equation so you don't need to)

Ordinary methods now may be used to solve this equation to obtain $x = 200$.

Conclusion: (Must be based on the correct solution as stated above.)

200 milliliters of _____ must be added to 100 milliliters of

_____ to obtain 300 milliliters of _____.