

## Mixture Problems

1. Veruca Salt is trying to make chocolate milk. So far she has made a 10% chocolate milk solution. She has also made a 25% chocolate milk solution. Unfortunately, the 10% solution is too weak, and the 25% solution is way too chocolatey. She has a lot of the 10% solution, but only 30 gallons of the 25% solution. How many gallons of the 10% solution should she add to the 25% solution to make a mixture that is 15% chocolate?
2. A pet store sells salt water for fish tanks. Unfortunately, recently hired Augustus Gloomp mixed a salt solution that was too weak. He made 150 pounds of a 4% salt solution. The boss wants a 7% solution. Help him out by giving him two options for reaching the 7% solution.
  - a) Add some salt. How much?
  - b) Evaporate some water. How much?
3. Suppose you work in a lab. You need a 15% acid solution for a certain test, but your supplier only ships a 10% solution and a 30% solution. Rather than pay the hefty surcharge to have the supplier make a 15% solution, you decide to mix 10% solution with 30% solution, to make your own 15% solution. You need 10 liters of the 15% acid solution. How many liters of 10% solution and 30% solution should you use?
4. How many liters of a 70% alcohol solution must be added to 50 liters of a 40% alcohol solution to produce a 50% alcohol solution?
5. How many ounces of pure water must be added to 50 ounces of a 15% saline solution to make a saline solution that is 10% salt?
6. Find the selling price per pound of a coffee mixture made from 8 pounds of coffee that sells for \$9.20 per pound and 12 pounds of coffee that costs \$5.50 per pound.

7. How many pounds of lima beans that cost \$0.90 per pound must be mixed with 16 pounds of corn that costs \$0.50 per pound to make a mixture of vegetables that costs \$0.65 per pound?
  
8. Two hundred liters of a punch that contains 35% fruit juice is mixed with 300 liters (L) of another punch. The resulting fruit punch is 20% fruit juice. Find the percent of fruit juice in the 300 liters of punch.
  
9. Ten grams of sugar are added to a 40-g serving of a breakfast cereal that is 30% sugar.  
What is the percent concentration of sugar in the resulting mixture?