

Lesson Summary

- Mixture problems deal with quantities of solutions and mixtures.
- The general structure of the expressions for mixture problems are

$$\text{Whole Quantity} = \text{Part} + \text{Part}.$$

- Using this structure makes the equation resemble the following:

$$\begin{aligned} &(\% \text{ of resulting quantity})(\text{amount of resulting quantity}) = \\ &(\% \text{ of 1}^{\text{st}} \text{ quantity})(\text{amount of 1}^{\text{st}} \text{ quantity}) + (\% \text{ of 2}^{\text{nd}} \text{ quantity})(\text{amount of 2}^{\text{nd}} \text{ quantity}). \end{aligned}$$

Problem Set

1. A 5-liter cleaning solution contains 30% bleach. A 3-liter cleaning solution contains 50% bleach. What percent of bleach is obtained by putting the two mixtures together?
2. A container is filled with 100 grams of bird feed that is 80% seed. How many grams of bird feed containing 5% seed must be added to get bird feed that is 40% seed?
3. A container is filled with 100 grams of bird feed that is 80% seed. Tom and Sally want to mix the 100 grams with bird feed that is 5% seed to get a mixture that is 40% seed. Tom wants to add 114 grams of the 5% seed, and Sally wants to add 115 grams of the 5% seed mix. What will be the percent of seed if Tom adds 114 grams? What will be the percent of seed if Sally adds 115 grams? How much do you think should be added to get 40% seed?
4. Jeanie likes mixing leftover salad dressings together to make new dressings. She combined 0.55 L of a 90% vinegar salad dressing with 0.45 L of another dressing to make 1 L of salad dressing that is 60% vinegar. What percent of the second salad dressing was vinegar?
5. Anna wants to make 30 mL of a 60% salt solution by mixing together a 72% salt solution and a 54% salt solution. How much of each solution must she use?
6. A mixed bag of candy is 25% chocolate bars and 75% other filler candy. Of the chocolate bars, 50% of them contains caramel. Of the other filler candy, 10% of them contain caramel. What percent of candy contains caramel?
7. A local fish market receives the daily catch of two local fishermen. The first fisherman's catch was 84% fish while the rest was other non-fish items. The second fisherman's catch was 76% fish while the rest was other non-fish items. If the fish market receives 75% of its catch from the first fisherman and 25% from the second, what was the percent of other non-fish items the local fish market bought from the fishermen altogether?