

Define Variables in words and units.

Write equation(s) that describe the situation.

Analyze the units involved in your equation(s). Make *sure* that the units are balanced.

Solve the equation(s).

1. A gallon of latex paint can cover 500 square feet. Find how many gallon containers of paint should be bought to paint two coats on each wall of a rectangular room whose dimensions are 14 feet by 16 feet (assume 8-foot ceilings).
2. The new governor of California makes \$27,500 more than the governor of New York, and \$120,724 more than the governor of Alaska. If the sum of these 3 salaries is \$471,276, find the salary of each governor. (*Source: State Web sites*)
3. A premedical student at a local university was complaining that she had just paid \$158.60 for her human anatomy book, including tax. Find the price of the book before taxes if the tax rate at this university is 9%.
4. Jenny takes 5 hours to rake the lawn. Johnny takes 4 hours. If Jonny starts raking the lawn at noon and Jenny joins him at 1:00 p.m., when will they finish?
5. How much 15% alcohol should be mixed with 80% alcohol in order to obtain 100 liters of 70% alcohol?
6. How much 15% alcohol should be mixed with 40 liters of 80% alcohol in order to obtain a 70% alcohol mixture? What will the volume of the final mixture be?
7. Adult tickets cost \$10 and children's tickets cost \$7.50 in an auditorium that holds 300 seats. If the auditorium sold out Monday night, and ticket sales amounted to \$2,677.50, how many adult tickets were sold? How many children's tickets were sold?
8. Adult tickets cost \$12 and children's tickets cost \$8.50 in an auditorium that holds 5,000 seats. If the auditorium sold out Monday night, and ticket sales amounted to \$5,3738.50, how many adult tickets were sold? How many children's tickets were sold?