



Applied Math Problem Solving



Course Objectives

1. Calculate percent using conversion to fractions and to decimals.
2. Calculate averages and rates.
3. Set up an algebraic equation from a problem description.
4. Solve an algebraic problem.
5. Write a ratio equation based on a problem description.
6. Solve a ratio equation for an unknown.



Principles

Rules for Working with Percents:

1. To solve a problem using percents, first convert the percent to a fraction or decimal.
 - To convert percents to a fraction, put the percent value over 100.
 - To convert percents to a decimal, move the decimal to the left 2 places.
2. To convert a fraction to percent, convert the fraction to a decimal (divide the numerator by the denominator) and multiply by 100.
3. To convert decimal to percent, multiply by 100.



Questions

1. A chemical solution is $\frac{3}{20}$ acid. What percentage of the solution is acid?

How much acid is in 50 gal?

2. Suppose a process needs 50 tons of slurry per day. How many pounds of slurry must be fed into the process per hour?



3. Based on the info below, what was the average number of gallons per hour?

Hour 1 = 3,516 gal

Hour 2 = 3,270 gal

Hour 3 = 3,426 gal

Hour 4 = 3,552 gal

$$\text{Average} = \frac{\text{sum of values}}{\text{number of values}}$$



4. The temperature in a reactor is rising 1 °C every 10 seconds. What is the temperature increase after 60 seconds?

