PROBLEMS AND SOLUTIONS - RATIO AND PROPORTIONS

Prepared by Ingrid Stewart, Ph.D., College of Southern Nevada
Please Send Questions and Comments to ingrid.stewart@csn.edu. Thank you!

YOU MUST BE ABLE TO DO THE FOLLOWING PROBLEMS WITHOUT A CALCULATOR!

Problem 1:

Find the unknown in the proportion $\frac{F}{3} = \frac{9}{5}$.

Problem 2:

A chain saw requires a mixture of 2-cycle engine oil and gasoline. According to the directions on a bottle of Oregon 2-cycle Engine Oil, 2.5 fluid ounces of oil are required for 1 gallon of gasoline. For 2.75 gallons, how many fluid ounces of oil are required?

Problem 3:

In 1998, the average exchange rate between U.S. dollars and U.K. pounds was 1 pound to $1.6762. How many U.S. dollars equal 400 U.K. pounds?

Problem 4:

If 6 gallons of premium unleaded gasoline cost $3.72, how much would it cost to completely fill a 15-gallon tank?

Problem 5:

The distance between Kansas City, Missouri, and Denver, Colorado is 600 miles. On a certain wall map, this is represented by a length of 2.4 feet. On this map, how many feet would there be between Memphis and Philadelphia, two cities that are actually 1,000 miles apart?

Problem 6:

The safe fluoride to water ratio is between 0.7 and 1.2 parts per million gallons of water. What is the range of fluoride that could be added to 200,000 gallons of water?

Problem 7:

A patient is to receive 125 mg of Ampicillin. A nurse has a solution for injection that contains 1 g of Ampicillin per 4 mL of solution. How many mL of solution should be injected?

Problem 8:

A disinfecting solution is mixed at a ratio of 2 parts of alcohol to 5 parts of distilled water. If the solution has 0.5 liters of water, how many milliliters of alcohol does it contain?

Problem 9:

A factory worker can assemble 24 watches in 45 minutes. If her pace stays constant, how many watches can she assemble every 15 minutes?

Problem 10:

On a certain map, 2 inches represents 25 miles. If the distance between Humarock and Cody measures 1.5 inches on the map, how many miles are the cities apart?

SOLUTIONS

You can find detailed solutions below the link for this problem set!

1. 27/5 or $5\frac{2}{5}$	2. 6.875 fluid ounces
3. $670.48	4. $9.30
5. 4 feet	6. 0.14 to 0.24 parts
7. 0.5 mL	8. 200 mL
9. 8 watches	10. 18.75 miles