

Dimensional Analysis and Problem Solving



Watch the video and solve the problem:

<https://www.khanacademy.org/math/algebra/units-in-modeling/dimensional-analysis-for-proportion-problems/v/can-a-squirrel-avoid-getting-run-over>

A squirrel is running across the road at 12 feet per second. It needs to run 9 feet to get across the road. How long will it take for the squirrel to run 9 feet?

A car is 50 feet away from the squirrel driving towards it at a speed of 100 feet per second. How long will it take the car to drive 50 feet?

Will the squirrel make it 9 feet across the road before the car gets there?

On your own:

1. You need to separate two liquids using a centrifuge. Your centrifuge rotates 200 times every 5 seconds, how many minutes will take to rotate 100,000 times?
2. Postassium chloride cost \$5.00 for 4 ml. How much Postassium chloride can you get for \$75.00?
3. You are doing a science fair experiment that required 2 ml of Postassium chloride per day. How many days will that amount of Postassium chloride last? (use previous question)

4. You are attending The Women in Science Conference in Chicago. How many hours will it take you to get to there if you are traveling at 90 miles per hour? Chicago is 810 miles away.

5. Before you leave for your trip, you need to get some gas. Gas cost \$2.00 per gallon how much gas can you get for \$46?

6. If your car gets 35 miles per gallon do you have enough to get to conference? Remember the conference is 810 miles away.

7. A wildlife biologist can tag 27 Blue Herons every 3 days. If she works in the field for 30 days, how many Blue Herons can she tag?

8. For every 10 Blue Herons she tags the National Science Foundation pays her \$350.00, how much money will she make catching the number of blue Herons from question #8? (use previous question)