

Accelerated Algebra 1 and Geometry A

Dimensional Analysis Practice

Set up and solve each problem using dimensional analysis.

1. How many seconds are in 16 weeks?
2. You are headed to a UGA game, and find that Athens is 3,979,008 inches from Alpharetta. What might be a better unit of measurement? Find the distance using that unit of measurement.
3. Calculate the number of millimeters in 54 yards.
4. Determine the number of pints in 3 gallons.
5. Christine wants to determine how many hours are in a year. Her unit conversion can be seen below. What is wrong with her reasoning? Find the mistake and fix it.

$$\frac{24 \text{ hours}}{1 \text{ day}} \times \frac{7 \text{ days}}{1 \text{ week}} \times \frac{4 \text{ weeks}}{1 \text{ month}} \times \frac{12 \text{ month}}{1 \text{ year}}$$

6. Before the use of money, and long before MasterCard, people bartered for goods they needed. If 25 chickens could be exchanged for 1 pig, 10 pigs for 1 cow, and 2 cows traded for 3 horses, how many horses could be obtained for 500 chickens?

7. Convert 36 centimeter per sec to miles per hour.
8. At Suzie's garden you can exchange vegetables and fruits instead of spending money. If you can exchange 6 cantaloupes for 12 tomatoes, 10 tomatoes for 20 grapes, and 18 grapes for 27 raspberries, how many raspberries could be exchanged for 20 cantaloupes?
9. Mrs. Johnson is decorating her daughter Zoe's bedroom. She needs 99 inches of fabric to make one curtain panel, but it is only sold in yards. How many yards of fabric does Mrs. Johnson need if she needs to make 4 curtain panels?
10. Usain Bolt ran the 100 meter in 9.58 seconds. How fast did he run in miles per hour?
11. If the volume of a beach ball is approximately 24,429 cubic centimeters, find the volume in cubic meters?
12. Parker is installing new carpet in his bedroom. His bedroom floor is shaped like a rectangle and measures 5 yards by 7 yards. If carpet costs \$4.84 per square foot and new carpet padding costs \$2.08 per square foot, how much will Parker spend to re-carpet his room?