

Dimensional Analysis WS

Metric Practice:

- 1) 8.3 mm = _____ Km
- 2) Which metric prefix is used to stand for 100? For 1000?

Density Practice:

- 1) A liquid has a density of 13.6 g/cm³. What is the mass of 52.8 mL of this liquid?

Scientific Notation Practice:

- 1) Express 2870000 in Scientific Notation: _____
- 2) The number 0.000435 expressed in scientific notation is: _____

Directions: Solve the following problems USING DIMENSIONAL ANALYSIS (line method). Even if you feel you can solve them a different way, you need to use dimensional analysis because that is the technique we are learning/practicing. Answers are in bold.

Q#	Problem	
1	Convert 32.7 inches into feet (1 ft = 12 in)	(2.73)
2	Convert 20.1 cm to inches (1 in = 2.54 cm)	(7.91)
3	My cat, Harley, weighs 8.7 lbs. How much does she weigh in kilograms? (1 Kg = 2.2046 lb)	(3.95)
4	Convert 8.4 Kg into pounds (1 lb = 453.6 g, 1Kg = 1000 g)	(18.52)
5	Convert 3100 inches to miles (1 mile = 5280 ft)	(0.049)
6	Convert 14 weeks into seconds	(8.47 x 10⁶)
7	Convert 5.93 yards into mm (1 yard = 3 ft, 1 in = 2.54 cm, 1 cm = 10 mm)	(5422.4)

Q#	Problem
8	<p>You're throwing a pizza party for 15 people and figure that each person will eat 4 slices. You call up the pizza place and find that each pizza will cost you \$14.78 and it will be cut into 12 slices. How much is the pizza going to cost you? You only have \$70. Will you have enough money? (hint, start with 15 people)</p> <p style="text-align: right;">(73.90, no)</p>
9	<p>Every three times I clean my bedroom, my mother makes me an apple pie. I cleaned my bedroom 9 times. How many apple pies does she owe me? (What?! Your mother doesn't reward you for cleaning your bedroom? Aren't there child labor laws? To make up for that injustice, you may have this very easy problem.)</p> <p style="text-align: right;">(3)</p>
10	<p>You have the Heebie-Geebies. Your grandmother sends you a remedy for the Heebie-Geebies with the following instructions: "Take 1 drop per 10 lbs. of body weight per day divided into 4 doses until the Heebie-Geebies are gone." How many drops do you take per dose?? (Hint, use your own body weight to start this problem, and your final answer should be drops/dose)</p> <p style="text-align: right;">(if you use 140 lb your answer will be 3.5 if you use a different weight your answer will be different)</p>
11	<p>Make up your own dimensional analysis problem! It must be a word problem. You need to have at least 3 conversion units in it, and it needs to be interesting! Then SOLVE your problem below, showing your work</p>