

Extra Dimensional Analysis Problems.

Instructions: Solve the following problems using only the **given** conversion factors in the table below and conversion factors within the metric system. Metric system conversion factors must be memorized for all quizzes and exams.

****Warning and Opportunity! This is a "first generation" worksheet which means there may be mistakes!! 2 points extra credit to each person who is first to bring a legitimate typo to my attention!*****

3 tsp = 1 Tbs	16 Tbs = 1 cup	1 Tbs = 0.5 fluid oz.
4 cups = 1 quart	1.000 Tbs = 14.79 mL	1 cup = 0.5 pint
1 lb. = 16 oz.	1.06 qt = 1.00 L	365 days = 1 year
24 hours = 1 day	60 minutes = 1 hour	60 seconds = 1 minute
12 inches = 1 foot	1.000 oz. = 28.35 g	3 feet = 1 yard
1 inch = 2.54 cm (defn.)	1 mile = 5280 feet	2 pints = 1 quart

1. What fraction of an hour is 1500 s? Ans. 0.42 hrs.
2. How many milliseconds are there in 12.5 deciseconds? Ans. 1250 ms.
3. How many μm are there in 46 cm? Ans. $4.6 \times 10^5 \mu\text{m}$
4. How many mL are there in 5.0 pints? Ans. 2400 mL
5. If there are 35 tablespoons of olive oil in a jar how many quarts is that? Ans. 0.55 qt.
6. How many centimeters are there in 5.0 yards? Ans. 460 cm.
7. A large paperclip weighs about 1.2 grams. How much does 50 paperclips weigh, in ounces(oz.)? Ans. 2.1 oz.
8. How many miles are made up by 100,000 inches? Ans. 2 miles
9. How many inches is 500. cm? Ans. 197 in.
10. How many miles are there in 1.00 kilometer? Ans. 0.621 miles
11. How many Mm are there in 1.00 miles? Ans. $1.61 \times 10^{-3} \text{Mm}$
12. Convert 2.00 cups into quarts. Ans. 0.500 qt.
13. Can you pour 75.0 mL into 1.00 cup? Ans. Yes, with plenty of room to spare!
14. How many grams are there in 25 pounds? Ans. 11,000 grams
15. How many fluid ounces (fl.oz.) are there in 1.0 liter? Ans. 34 fl. oz.
16. How many milliliters are there in 10. ML? Ans. $1.0 \times 10^{10} \text{mL}$
17. How many mm are there in 2.0 yards? Ans. 1800 mm
18. In Europe, everyone knows their weight in kilograms. If a man weighed 175 pounds, what would he weigh in kg. Ans. 79.4 kg What is your weight in kg?
19. How many pints make up 1.0 liter? Ans. 2.1 pt
20. How many milliliters make up 1.0 L? Ans. $1.0 \times 10^3 \text{mL}$