

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Dimensional Analysis Worksheet

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Setup and solve the following using dimensional analysis.

Common Conversion Factors			
1 yr = 365 days	1 mi = 5280 ft	454 g = 1 lb	1 gal = 3.79 L
1 day = 24 hours	1 ft = 12 in	1 lb = 16 oz	264.2 gal = 1 m <sup>3</sup>
1 hr = 60 minutes	1 in = 2.54 cm	1 kg = 2.2 lbs	1 gal = 128 fluid oz
1 min = 60 sec	3 ft = 1 yd	946 mL = 1 qt	4 qt = 1 gal

**Steps:**

1. Given quantity w/its unit
2. Set up conversion factor
3. Divide units – only desired unit should be left
4. Solve the problem.

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1. 5,400 inches to miles

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2. 16 weeks to hours

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3. 25 mi/hr to ft/sec

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4. The moon is 250,000 miles away. How many feet is it from earth?

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5. How many days are there in 240,000 seconds?

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For #6 and #7, use the answer bank to set up the conversions. Then simplify your answer.

Answer Bank			
$\frac{54\text{yd}}{1}$	$\frac{2.54\text{cm}}{1\text{in}}$	$\frac{1\text{mi}}{5280\text{ft}}$	$\frac{1\text{in}}{2.54\text{cm}}$
$\frac{3\text{ft}}{1\text{yd}}$	$\frac{19\text{in}}{1}$	$\frac{1\text{ft}}{12\text{in}}$	$\frac{12\text{in}}{1\text{ft}}$

6. 54 yards to cm

$$\text{_____} \bullet \text{_____} \bullet \text{_____} \bullet \text{_____} = \text{_____} =$$

7. 19 inches to feet

$$\text{_____} \bullet \text{_____} = \text{_____} =$$

8. How many miles will a person run during a 10 kilometer race?

9. How many inches are there in a football field (100 yds)?

10. Every month, a group of 46 students write essays in a class. Each student writes 2 essays, and each essay contains an average of 1000 words. **How many words do the students write every month?**