

## Dimensional Analysis Worksheet

1. 261 g  $\rightarrow$  kg
2. 3 days  $\rightarrow$  seconds
3. 9,474 mm  $\rightarrow$  cm
4. 0.73 kL  $\rightarrow$  L
5. 5.93 cm<sup>3</sup>  $\rightarrow$  m<sup>3</sup>
6. 498.82 cg  $\rightarrow$  mg
7. 1 ft<sup>3</sup>  $\rightarrow$  m<sup>3</sup>  
(Note: 3.28 ft = 1 m)
8. 1 year  $\rightarrow$  minutes
9. 175 lbs  $\rightarrow$  kg  
(Note: 2.2 lb = 1 kg)
10. 4.65 km  $\rightarrow$  m
11. 22.4 kg/L to kg/mL
12. 0.74 Kcal/min to cal/sec
13. 1.42 g/cm<sup>2</sup> to mg/mm<sup>2</sup>
14. 10095 m/s to miles/s
15. 9.81 m/s<sup>2</sup> to ft/s<sup>2</sup>
16. 8.41 g/mL to Kg/L
17. 3.8 Km/sec to miles/year
18. 7.68 cal/sec to Kcal/min
19. 8.24 g/cm<sup>2</sup> to mg/mm<sup>2</sup>
20. 25 m/s to miles/hr
21. Convert  $2.05 \times 10^5$  seconds into years.
22. Traveling at 65 miles/hour, how many minutes will it take to drive 125 miles to San Diego?
23. Convert 50 years into seconds. Express your answer in scientific notation.
24. Traveling at 65 miles/hour, how many feet can you travel in 22 minutes? (1 mile = 5280 feet)

25. The total amount of fresh water on earth is estimated to be  $3.73 \times 10^8 \text{ km}^3$ . What is this volume in cubic meters? In liters?
26. Sally Leadfoot was pulled over on her way from Syracuse to Ithaca by an officer claiming she was speeding. The speed limit is 65 mi/hr and Sally had traveled 97 km in 102 minutes. How fast was Sally's average speed? Does she deserve a ticket?

27. Marie was trying to make her favourite recipe but was not sure of the conversions. Would you eat these cookies?

Recipe	Marie's Conversions
2 $\frac{1}{4}$ Cups flour	0.5 litre flour
0.5 lbs choc. chips	2000 g choc. chips
325 degrees Fahrenheit	373 Kelvin

28. Winnipeg is refilling the pool. How many gallons of water will it take if the pool is 50m by 25m by 1.5m? (1 gallon = 3.786 L)
29. Meredith found some lace at a price of 4.0 £/meter in Ireland that she liked but was afraid she was paying too much for it. The same lace in the Canada would sell for \$5.99/yd. Was she paying too much for it? (\$1 = 0.498 £) (1 yard = 3 ft)
30. At a given point in its orbit, the moon is  $2.4 \times 10^5$  miles from earth. How long does it take light from a source on earth to reach a reflector on the moon and then return to earth? (speed of light is  $3.0 \times 10^8 \text{ m/s}$ )
31. In Raiders of the Lost Ark, Indiana Jones tried to remove a gold idol from a booby-trapped pedestal. He replaces the idol with a bag of sand. If the idol has a mass of 2.00 kg, how many litres of sand must he place on the pedestal to keep the mass sensitive booby-trap from activating? (Density of sand is  $3.00 \text{ g/cm}^3$ )