

# Unit Conversion

*Prepared by Alex Katsenelenbogen*

1. Jean Ralphio runs at a speed of  $2/m/s$ . If there are  $1609/m$  in a mile, then what is his speed measured in miles per hour? How meters does he cover in 3 hours? How many miles does he cover in 4 hours?
2. A rectangularly shaped garden is  $3m$  on each side. What is its area in  $yards^2$ ?
3. The area of a television screen is  $1.5m^2$ . If the thickness of the television is  $0.3m$ , what is its area in  $cm^2$ ? What is its volume in  $cm^3$ ?
4. A circular plate has a radius of  $7\text{ in}$ . If there are  $2.54\text{ cm}$  in an inch, What is the area of the circular plate measured in  $cm^2$ ? If the plate has a thickness of  $0.4\text{ cm}$  and is roughly shaped like a cylinder, what is it's volume in  $in^3$ ?
5. A bottle of coke has an **energy density** of  $6.25\text{ cal/oz}$  If there are  $4184\text{ J}$  in one food calorie, and  $0.03\text{ L}$  in one oz, what is the energy density in of the bottle of coke measured in  $J/L$ . How many Joules of energy are there in a 2L bottle of coke?