1. Convert

   (a.) 3 years to hours. **(2 pts)**

   $$3\,years \times \frac{365\,days}{1\,year} \times \frac{24\,hr}{1\,day} = 26,280\,hr.$$

   (b.) 300 cubic inches to cubic centimeters. **(2 pts)**

   $$1\,cm = 2.54\,in \Rightarrow (1\,in)^3 = (2.54\,cm)^3 \Rightarrow 1\,in^3 = 16.4\,cm^3.$$

   $$300\,in^3 \times \frac{16.4\,cm^3}{1\,in^3} = 4,920\,cm^3.$$

   (c.) 19 meters per second to miles per hour. *(1 kilometer = 1,000 meters.)* **(2 pts)**

   $$\frac{19\,m}{1\,sec} \times \frac{1\,km}{1,000\,m} \times \frac{1\,mi}{1.609\,km} \times \frac{60\,sec}{1\,min} \times \frac{60\,min}{1\,hr} = 42.51\frac{mi}{hr}.$$

2. What is the volume of a swimming pool of length 50 meters, width 35 meters, and depth 3 meters

   (a.) in cubic meters? **(2 pts)**

   $$V = 50\,m \times 35\,m \times 3\,m = 5,250\,m^3.$$

   (b.) in cubic yards? *(1 yard = 0.9144 meters.)* **(2 pts)**

   $$1\,yd = 0.9144\,m \Rightarrow (1\,yd)^3 = (0.9144\,m)^3 \Rightarrow 1\,yd^3 = 0.765\,m^3.$$

   $$V = 5,250\,m^3 \times \frac{1\,yd^3}{0.765\,m^3} = 6,863\,yd^3.$$

3. What is the height in inches of a 6'11" (6 feet 11 inches) basketball player? *(1 foot = 12 inches.)* **(2 pts)**

   $$h = 6\,ft \times \frac{12\,in}{1\,ft} + 11\,in = 83\,in.$$

4. Gasoline at a Belgian gas station costs 1.40 euros per liter. What is the price in dollars per gallon?
   (1 euro = 1.36 dollars.) **(2 pts)**

$$\frac{1.40\,e}{1\,L} \times \frac{3.785\,L}{1\,gal} \times \frac{\$1.36}{1\,e} = \$7.21/\,gal.$$

5. A hose fills a hot tub at a rate of 3.2 gallons per minute. How many hours will it take to fill a 300-gallon hot tub?
   (Extra Credit: 2 pts)

$$300\,gal \times \frac{1\,\min}{3.2\,gal} \times \frac{1\,hr}{60\,min} = 1.56\,hr.$$