# Unit Conversion:

**Mathematical method used in basic calculations for converting from one set of units to another.**

**Ex:1 How many eggs are in 2 dozen?**

**Step 1: Identify the problem.**

$$\text{2 dozen} \times \text{?} = \text{\# of eggs}$$

**Step 2: Identify the equality.**

$$1 \text{ dozen} = 12 \text{ eggs}$$

**Convert the equality into a fraction.**

$$\frac{1 \text{ dozen}}{12 \text{ eggs}} = \frac{12 \text{ eggs}}{1 \text{ dozen}} = 1$$

**Ex:1 How many eggs are in 2 dozen?**

**Step 3: Multiply quantity by equality. WATCH UNITS!!**

$$2 \text{ dozen} \times \frac{12 \text{ eggs}}{1 \text{ dozen}} = 24 \text{ eggs}$$

**If done incorrectly. Units do not cancel out.**

$$2 \text{ dozen} \times \frac{1 \text{ dozen}}{12 \text{ eggs}} = \textbf{wrong!!}$$

**Ex:2 How many seconds are in 5 days?**

$$5 \text{ day} \times ? = \text{\# of seconds}$$

**Equalities:**

$$1 \text{ day} = 24 \text{ hours}$$

$$1 \text{ hour} = 60 \text{ minutes}$$

$$1 \text{ minute} = 60 \text{ seconds}$$

$$5 \text{ day} \times \frac{24 \text{ hours}}{1 \text{ day}} \times \frac{60 \text{ min}}{1 \text{ hour}} \times \frac{60 \text{ sec}}{1 \text{ min}} =$$

**432000 sec**

**Ex:3** A pateient is charted 15 mg/kg/day. The patient weighs 170. lb. What is the total dosage per day?

$$170. \text{ lb} \times ? = \# \text{ of mg of drug}$$

**Equalities:**

$$1 \text{ lb} = 0.454 \text{ kg}$$

$$15 \text{ mg} = 1 \text{ kg} \quad \text{every day}$$

$$170. \text{ lb} \times \frac{0.454 \text{ kg}}{1 \text{ lb}} \times \frac{15 \text{ mg}}{1 \text{ kg}} = 1160 \text{ mg}$$

per day