Using Dimensional Analysis for Convert between Units

1. Underline what is given and circle the desired unit
2. Write the given, a * , and a fraction bar $4\,\cancel{hr} * \frac{60\text{ min}}{1\,\cancel{hr}}$
3. Must have **DIAGONAL UNITS** - write the given unit on the bottom of the first fraction
4. Determine a conversion factor *
5. Multiply Across (top and bottom) and Divide to Simplify

30 quarts to gallons

$$\frac{30\,\cancel{qts}}{1} * \frac{1\text{ gal}}{4\,\cancel{qts}} = \frac{30}{4} = \frac{15}{2} = 7.5\text{ gal}$$

25 pints to gallons

$$25\,\cancel{pts} * \frac{1\,\cancel{qt}}{2\,\cancel{pts}} * \frac{1\text{ gal}}{4\,\cancel{qt}} = \frac{25}{8}\text{ gal} = 3.125\text{ gal}$$

$$12000\,\cancel{sec} * \frac{1\,\cancel{min}}{60\,\cancel{sec}} * \frac{1\,\cancel{hr}}{60\,\cancel{min}} * \frac{1\text{ day}}{24\,\cancel{hr}} = \quad \text{days}$$

$$\frac{120\cancel{00}}{864\cancel{00}} \approx 0.14\text{ day}$$