January 29, 2015

1st
2nd

Starter

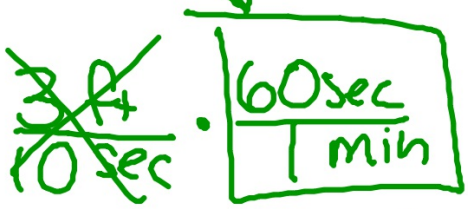
There are 6 places set at each table for a big outdoor party. All the tables and all the chairs have 4 legs each. The tables and chairs together have a total of 196 legs. If there is one place set for each person who will attend, how many people are expected?

1/29 - Converting between Units

First you need to understand UNIT FRACTIONS.

Definition: a *unit fraction* is a fraction where the numerator and the denominator are the same size but may be different units.

Examples:



$\frac{1\text{ ft}}{12\text{ in}}$ $\frac{1\text{ gal}}{128\text{ oz}}$ $\frac{1\text{ gal}}{4\text{ quarts}}$

Convert 13 feet to inches using unit fractions.

$$13\,feet = \frac{13\,ft}{1}$$

$$= \frac{13\,ft}{1} \cdot 1$$

$$= \frac{13\,ft}{1} \cdot (any\ unit\ fraction)$$

$$= \frac{13\,ft}{1} \cdot \frac{any\ number}{itself}$$

$$= \frac{13\,\cancel{ft}}{1} \cdot \frac{12\,in}{1\,\cancel{ft}}$$

$$= 156\,in$$

Convert one unit to the other by using unit fractions.

$2\frac{1}{2}$ ft = _____ in

label goes on the top of the fraction

$\frac{5}{2}\text{ ft} \cdot \frac{12\text{ in}}{1\text{ ft}} = \frac{30\text{ in}}{1}$

$= 30\text{ in}$

$7\frac{3}{4}$ in = _____ ft

$\frac{31\text{ in}}{4} \cdot \frac{1\text{ ft}}{12\text{ in}} = \frac{31}{48}\text{ ft}$

$1\frac{1}{4}$ hours = _____ min

$\frac{5\text{ hr}}{4} \cdot \frac{60\text{ min}}{1\text{ hr}} = 75\text{ min}$

$1\frac{1}{2}$ pints = _____ quarts

$\frac{3}{2}\text{ pt} \cdot \frac{1\text{ qt}}{2\text{ pt}} = \frac{3}{4}\text{ qts}$

Convert 60 miles per hour to miles per minute using unit fractions.

$$60\ mph = \frac{60\ miles}{1\ hour}$$

$$= \frac{60\ miles}{1\ hour} \cdot 1$$

$$= \frac{60\ miles}{1\ hour} \cdot (any\ unit\ fraction)$$

$$= \frac{60\ miles}{1\ hour} \cdot \frac{any\ number}{itself}$$

$$= \frac{60\ miles}{1\ hour} \cdot \frac{1\ hour}{60\ \text{min}}$$

$$= 1\ \text{mi/min}$$

$\frac{\text{miles}}{\text{min}}$

Convert each unit rate using unit fractions.

20 mph = _____ ft/hr

per

$\frac{20 \text{ miles}}{1 \text{ hour}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}}$

$= 105{,}600$ ft/hr

1 mi = 5280 ft

20 mph = _____ miles/minute

$\frac{20 \text{ mi}}{1 \text{ hr}} \cdot \frac{1 \text{ hr}}{60 \text{ min}}$

$= \frac{1}{3}$ mi/min

1 hr = 60 min

20 gal/min = _____ gal/hr

$\frac{20 \text{ gal}}{1 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}}$

$= 1200$ gal/hr

1 hr = 60 min

15 miles/gal = _____ miles/quart

$\frac{15 \text{ mi}}{1 \text{ gal}} \cdot \frac{1 \text{ gal}}{4 \text{ qts}}$

$= \frac{15}{4}$ mi/qt

$= 3\frac{3}{4}$ mi/qt

decimals today please

3.75

1 gal = 4 qts

Homework

Gold WS 6

Due Tuesday