

Show All Work To Receive Credit! Conversion factors and prefixes:

$G = 10^9$, $M = 10^6$, $k = 10^3$, $c = 10^{-2}$, $m = 10^{-3}$, $\mu = 10^{-6}$, $n = 10^{-9}$, $2.54 \text{ cm} = 1 \text{ in}$,
 $12 \text{ in} = 1 \text{ ft}$, $5280 \text{ ft} = 1 \text{ mile}$, $3 \text{ feet} = 1 \text{ yd}$, $60 \text{ sec} = 1 \text{ min}$, $1 \text{ hr} = 60 \text{ min}$, $4 \text{ quarts} = 1 \text{ gal}$, $2 \text{ pints} = 1 \text{ quart}$

1. (6 Pts) A snail is traveling at a rate of 35 cm/minute. How fast is the snail going in yards per second?

$$\frac{35 \cancel{\text{cm}}}{\cancel{\text{min}}} \times \frac{1 \cancel{\text{in}}}{2.54 \cancel{\text{cm}}} \times \frac{1 \cancel{\text{ft}}}{12 \cancel{\text{in}}} \times \frac{1 \cancel{\text{yd}}}{3 \cancel{\text{ft}}} \times \frac{1 \cancel{\text{min}}}{60 \cancel{\text{s}}} = 0.0064 \frac{\text{yd}}{\text{s}}$$


2. (4 Pts) Convert each of the following to scientific notation WITHOUT the use of prefixes:

a. $47 \text{ centi milli micro feet} = 47 \times 10^{-11} \text{ feet}$ 4.7×10^{-10}

b. $7.2 \times 10^4 \mu \text{ meters} = 7.2 \times 10^{-2} \text{ meters}$

3. (5 Pts) A room measures 12 inches by 14 inches. Determine its area in square cm.

$A = l \times w$



$$\frac{12 \cancel{\text{in}}}{1 \cancel{\text{in}}} \times \frac{14 \cancel{\text{in}}}{2.54 \cancel{\text{cm}}} \times \frac{2.54 \cancel{\text{cm}}}{1 \cancel{\text{in}}} = 1083 \text{ cm}^2$$

4. (5 Pts) How many pints are in 47 gallons?

$$\frac{47 \cancel{\text{gal}}}{1 \cancel{\text{gal}}} \times \frac{8 \cancel{\text{pts}}}{1 \cancel{\text{qt}}} \times \frac{2 \cancel{\text{pts}}}{1 \cancel{\text{qt}}} = 376 \text{ pts}$$

5. (5 Pts) A sample of silver ore was found to contain 0.46 % silver by mass. How many grams of silver can be recovered 400.0 kg of ore?

$$\frac{400.0 \times 10^3 \cancel{\text{g ore}}}{100 \cancel{\text{g ore}}} \times 0.46 \text{ Ag} = 1840 \text{ g Ag}$$

$$\frac{0.46 \text{ Ag}}{100 \text{ ore}} \leftarrow \text{ratio}$$

Show All Work To Receive Credit! Conversion factors and prefixes:

$G = 10^9$, $M = 10^6$, $k = 10^3$, $c = 10^{-2}$, $m = 10^{-3}$, $\mu = 10^{-6}$, $n = 10^{-9}$, $2.54 \text{ cm} = 1 \text{ in}$,
 $12 \text{ in} = 1 \text{ ft}$, $5280 \text{ ft} = 1 \text{ mile}$, $3 \text{ feet} = 1 \text{ yd}$, $60 \text{ sec} = 1 \text{ min}$, $1 \text{ hr} = 60 \text{ min}$, $4 \text{ quarts} = 1 \text{ gal}$, $2 \text{ pints} = 1 \text{ quart}$

1. (6 Pts) A snail is traveling at a rate of 55 cm/minute. How fast is the snail going in yards per second?

2. (4 Pts) Convert each of the following to scientific notation without the use of prefixes:

a. 47 centi milli nano feet = _____ feet

b. $7.2 \times 10^5 \mu$ meters = _____ meters

3. (5 Pts) A room measures 13 inches by 14 inches. Determine its area in square cm.

4. (5 Pts) How many pints are in 67 gallons of water?

5. (5 Pts) A sample of silver ore was found to contain 0.046 % silver by mass. How many grams of silver can be recovered 400.0 kg of ore?