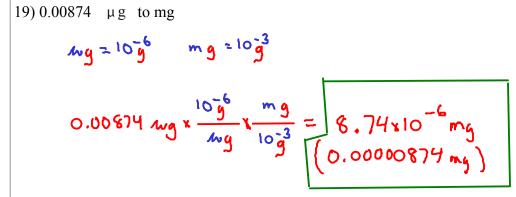


0.00(87)
$$\frac{10^3}{\text{km}} \times \frac{\text{mm}}{10^{-3}} = 1570 \text{ mm}$$



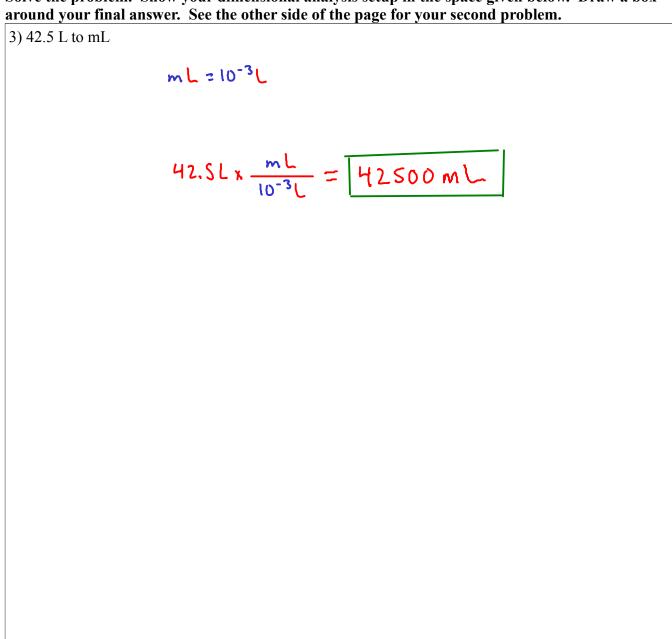
2) 55000 g to kg
$$K_{g} = 10_{g}^{3}$$

$$SSOOD_g \times \frac{Kg}{10g^3} = SS Kg$$

20) 9.89 cs to ms
$$c = 10^{-2} \qquad ms = 10^{-3}$$

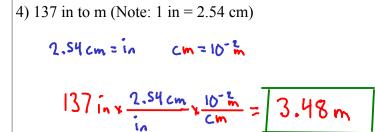
$$9.89 cs \times \frac{105^2}{cs} \times \frac{ms}{105^3} = 98.9 ms$$

Solve the problem. Show your dimensional analysis setup in the space given below. Draw a box



21) 12.4 mm² to cm²
$$m m = 10^{-3} m$$
 $Cm = 10^{-2} m$

$$12.4 mm^{2} \times \frac{10^{-3} m}{mm} \times \frac{10^{-3} m}{mm} \times \frac{Cm}{10^{-2} m} = 0.124 cm^{2}$$



5) 0.847 Mg to kg
$$M_g = 10_g^6 \qquad |k_g| = 10_g^3$$

$$0.847 Mg \times \frac{10_g^6}{Mg} \times \frac{k_g}{10_g^3} = 847 kg$$

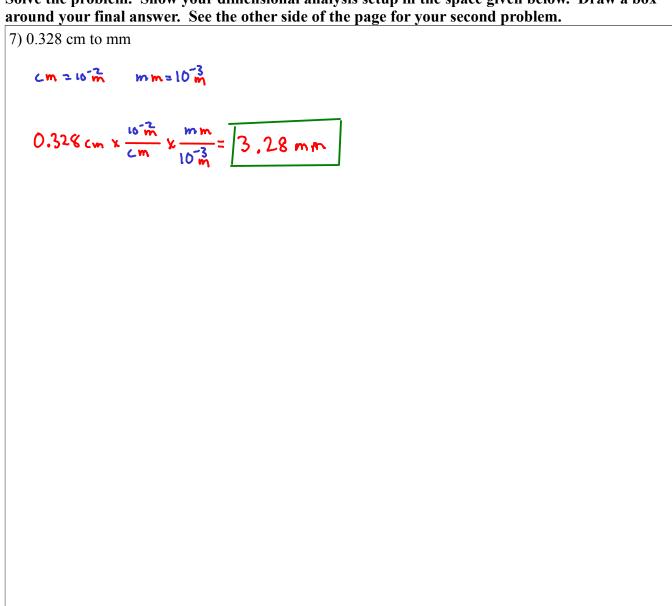
23) 24.5 in to m, You may assume that 2.54 cm = in
$$2.54 \text{ cm} = 10^{-2} \text{ m}$$

$$24.5 \text{ in } \times \frac{2.54 \text{ cm}}{\text{in}} \times \frac{10^{-2} \text{m}}{\text{cm}} = 0.622 \text{m}$$

6) 5650 feet to furlong

(Assume that 1 furlong = 220 yd, and that 3 ft = 1 yd. These relationships are exact!)

Solve the problem. Show your dimensional analysis setup in the space given below. Draw a box



25) 21.47 inches to yards, assuming 12 in = ft, 3 ft = yd

12 in = ft

3 ft = yd

21.47 in x

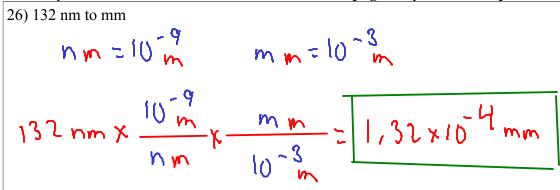
$$\frac{f+}{12 \text{ in}}$$
 x

 $\frac{3 ft}{3 ft}$ = 0, 5% 64 yd

8) 1.3
$$\mu$$
L to n L

$$M = 10^{-6}L \quad n = 10^{-9}L$$

1.3 μ L x $\frac{10^{-6}L}{\mu} \times \frac{nL}{10^{-9}L} = 1300 \text{ nL}$



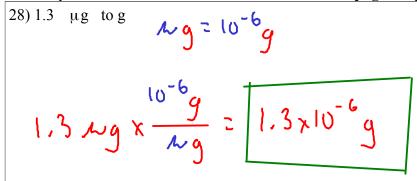
9) 0.55 mg to g

$$m_g = 10^{-3}g$$

0.55 mg $\times \frac{10^{-3}g}{m_g} = \begin{bmatrix} 5.5 \cdot 10^{-4}g \\ 0.000 \text{ SS g} \end{bmatrix}$

27)
$$1.35 \times 10^6 \mu \, g \, to \, cg$$
 $\lambda g = 10^{-6} \, g$ $\lambda g = 10^{-2} \, g$

10) Calculate how many gallons of gas would be required to drive 155 miles in a car whose fuel usage is 32 miles per gallon.



11) 12.4 mg to g

$$mg = 10 \frac{5}{9}^3$$

$$12.4 \text{ mg} \times \frac{10 \, \overline{g}^3}{\text{mg}} = 0.0124 \, g$$

29) 0.0017 Mg to kg
$$M_g = 10^6 \text{g} \quad k_g = 10^3 \text{g}$$

$$0.0017 M_g \times \frac{10^6 \text{g}}{M_g} \times \frac{k_g}{10^3 \text{g}} = 1.7 \text{ kg}$$

1300000
$$\log x \frac{10\overline{9}^6}{\log x} \times \frac{mg}{10\overline{9}^3} = 1300 \text{ mg}$$

30) 0.0000129 cm to Mm
$$(m = 10^{-2} \text{ m})$$

13) 87.0 mL to L

m L =
$$10^{-3}$$
 L

87.0 mL x $\frac{10^{-3}L}{mL} = 0.0870L$

31) 0.472 yards to inches, assuming 12 in = ft, 3 ft = yd
12 in = Ft 3 ft = yd
0.472 yd x
$$\frac{3 ft}{yd}$$
 x $\frac{12 in}{ft}$ = 17.0 in

64700 cm x
$$\frac{10^{-2}}{cm}$$
 x $\frac{Mm}{10^{6}m}$ = $\left[0.000647 M_{m}\right]$

32) 34.3 in³ to ft³, assuming 12 in = ft

12 in = ft

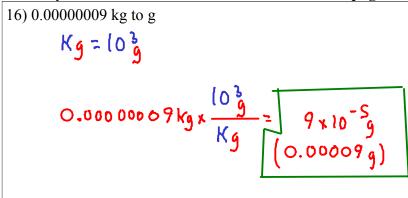
34.3 in³
$$\times \frac{ft}{12 \text{ in}} \times \frac{ft}{12 \text{ in}} \times \frac{ft}{12 \text{ in}} = 0.0198 \text{ ft}^3$$

15) 0.00087 km to cm
$$\frac{10^{3}}{10^{3}} = \frac{10^{-2}}{10^{-2}}$$
0.00087 km x $\frac{10^{3}}{10^{-2}} \times \frac{10^{-2}}{10^{-2}} = \frac{10^{-2}}{10^{-2}}$

33) 27.3 µLto mL

$$ML = 10^{-6}L$$
 $mL = 10^{-3}L$

$$27.3 wL \times \frac{10^{-6}L}{ML} \times \frac{mL}{10^{-3}L} = 0.0273 mL$$



34) 12 m to mm

$$m = 10^{-3} m$$

17)
$$0.0000874 \,\mathrm{m} \,\mathrm{to} \,\mathrm{cm}$$

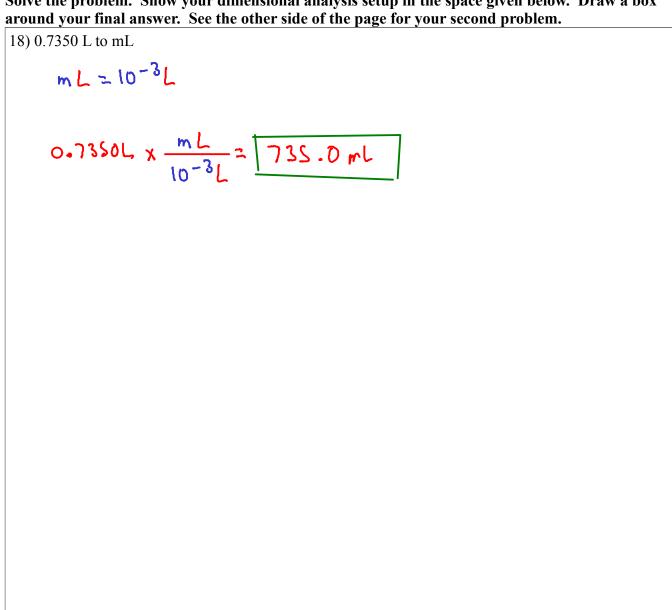
$$C \,\mathrm{m} = 10^{-2} \,\mathrm{m}$$

$$0.0000874 \,\mathrm{m} \,\mathrm{x} \, \frac{C \,\mathrm{m}}{10^{-2}} = \left[0.00874 \,\mathrm{cm} \,\mathrm{m} \,\mathrm{s} \, \frac{\mathrm{cm}}{\mathrm{s}^{-3} \,\mathrm{cm}} \right]$$

$$0.013 \text{ ks to ms} \qquad \text{Ks} = 10^{3} \text{s} \qquad \text{ms} = 10^{-3} \text{s}$$

$$0.013 \text{ Ks} \times \frac{10^{3} \text{s}}{\text{Ks}} \times \frac{\text{ms}}{10^{-3} \text{s}} = 13000 \text{ ms}$$

Solve the problem. Show your dimensional analysis setup in the space given below. Draw a box



36) 11 s to
$$\mu s$$

$$M S = 10^{-6} s$$

$$11 S X \frac{M S}{10^{-6}} = \frac{110000000 MS}{(1.1 \times 10^{7} MS)}$$