Chapter 1 Homework Answers

1a) $5.52\times10^{3}\ \text{kg/m}^3$.

1b) between the tabulated densities of aluminum and iron.

5) 7.69 cm

12a) $[A] = L/T^3$, and $[B] = L/T$

12b) L/T.

14) 9.19 nm/s

20a) $7.14\times10^{-2}\ \frac{\text{gal}}{\text{s}}$

20b) $2.70\times10^{-4}\ \frac{\text{m}^3}{\text{s}}$

20c) 1.03 h

23) $1.51\times10^{-4}\ \text{m}(\text{or } 151\ \mu\text{m})$

24a) $3.39\times10^{5}\ \text{ft}^3$

24b) $2.54\times10^{4}\ \text{lb}$

29) You figure it out!

33) $209\,\text{cm}^2 \pm 4\,\text{cm}^2$

36) $\rho_N = 1.66\times10^{3}\ \frac{\text{kg}}{\text{m}^3}$

42) $R = 1.38$ km

44) $\frac{t}{r} = \pm\sqrt{12} = \pm 3.46.$

54) $h = r\ tan\ \phi = (\tan\phi)C/2\pi.$

61a) $B = 2.70\ \text{g/cm}^3$ $C = 1.19\ \text{g/cm}^4$

62b) 1.39 kg.

66) $\frac{d\tan\phi\tan\theta}{(\tan\phi - \tan\theta)}$