Multiplying this by the estimate of the total number of cars in the United States gives an annual consumption of 6×10^{10} gal.

$$(12 \times 10^7 \ \text{cars})\left(\frac{500 \text{ gal}}{1 \ \text{car}}\right) = 6 \times 10^{10} \text{ gal}$$

Note that this estimate depends on the assumptions made about the average household size, the number of cars per household, the distance traveled, and the average gas mileage.

SECTION REVIEW

1. Indicate which of the following physics symbols denote units and which denote variables or quantities.

a. C **b.** *c* **c.** *C* **d.** *t* **e.** T **f.** *T*

2. Determine the units of the quantity described by each of the following combinations of units:

a. kg (m/s) (1/s) **b.** (kg/s) (m/s^2)
c. (kg/s) $(m/s)^2$ **d.** (kg/s) (m/s)

3. Which of the following is the best order-of-magnitude estimate in meters of the height of a mountain?

a. 1 m **b.** 10 m **c.** 100 m **d.** 1000 m

4. Interpreting Graphics Which graph best matches the data?

Volume of air (m^3)	Mass of air (kg)
0.50	0.644
1.50	1.936
2.25	2.899
4.00	5.159
5.50	7.096

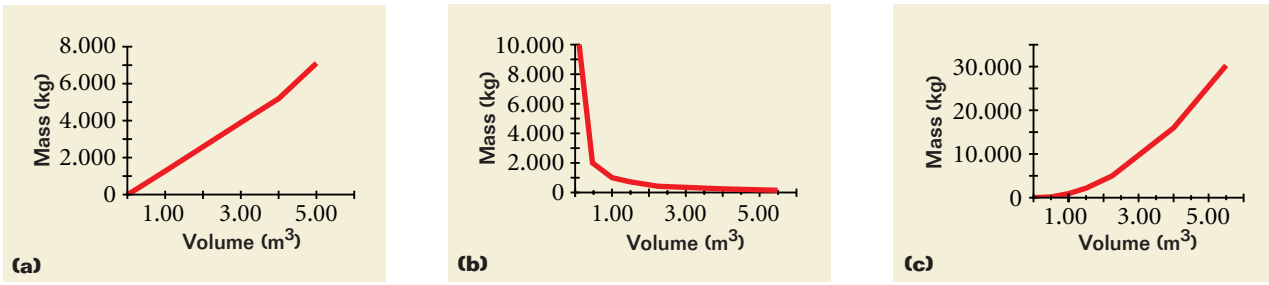

Figure 16

5. Critical Thinking Which of the following equations best matches the data from item 4?

a. $(\text{mass})^2 = 1.29\ (\text{volume})$ **b.** $(\text{mass})(\text{volume}) = 1.29$
c. $\text{mass} = 1.29\ (\text{volume})$ **d.** $\text{mass} = 1.29\ (\text{volume})^2$