

Name KEY

Period _____

Date _____

Units & Unit Conversions - Ch. 2

PART A - SI UNITS

What type of measurement is indicated by each of the following units? Choices are in the last column.

1. g/mL	<u>density</u>	4. g	<u>mass</u>	7. mg	<u>mass</u>	density
2. s	<u>time</u>	5. cm ³	<u>volume</u>	8. L	<u>volume</u>	length
3. km	<u>distance</u>	6. mm	<u>distance</u>	9. g/cm ³	<u>density</u>	mass
						time
						volume

PART B - DENSITY

10. A small gold nugget has volume of 0.87 cm³. What is its mass if the density of gold is 19.3 g/cm³?

$$M = dV = (19.3 \text{ g/cm}^3)(0.87 \text{ cm}^3) = 17 \text{ g}$$

11. What volume is occupied by 35.2 g of carbon tetrachloride if its density is 1.60 g/mL?

$$V = \frac{M}{D} = \frac{35.2 \text{ g}}{1.60 \text{ g/mL}} = 22.0 \text{ mL}$$

PART B - UNIT CONVERSIONS

Perform the following SI prefix conversions:

12. 25 kg = 25,000 g

14. 0.36 mm = 360 μm

13. 9.3 mL = .0093 L

15. 24 cm = .00024 km

16. How many kilometers are there in 3.4 miles?

$$\frac{3.4 \text{ mi} \times 1.6 \text{ km}}{1 \text{ mi}} = 5.5 \text{ km}$$

17. If a man's mass is 180 pounds, find his mass in grams.

$$\frac{180 \text{ lbs} \times 1 \text{ kg} \times 1000 \text{ g}}{2.20 \text{ lbs} \times 1 \text{ kg}} = 82,000 \text{ g}$$

18. How many kilograms is a 43.5-in³ sample of silver if the density of silver is 10.5 g/cm³?

$$\frac{43.5 \text{ in}^3 \times (2.54 \text{ cm})^3 \times 10.5 \text{ g} \times 1 \text{ kg}}{1 \text{ in}^3 \times 1 \text{ cm}^3 \times 1000 \text{ g}} = 7.49 \text{ kg}$$

19. How many liters are there in 13 cases of cola if each can is 12 ounces and each case contains 24 cans. (1 quart = 32 ounces)

$$\frac{13 \text{ cases} \times 24 \text{ cans} \times 12 \text{ oz} \times 1 \text{ qt} \times .95 \text{ L}}{1 \text{ case} \times 1 \text{ can} \times 32 \text{ oz} \times 1 \text{ qt}} = 110 \text{ L}$$