

Answers

1. Automotive batteries generally are filled with sulfuric acid. If a battery has a volume of 1.86 L and contains 3.42×10^6 mg of sulfuric acid, what is the density of sulfuric acid in g/mL? (5 points)

1.84 g/ mL

2. A child's fever medicine has a concentration of 250 mg/mL. If a child receives 2.0 teaspoons of this medicine, how many mg of medicine is being received? (1 teaspoon = 4.93 mL) (5 points)

2500 mg

3. Perform the following calculations. Report the answer to the correct number of significant digits. (5 points)

$$110.23 \text{ cm} + 0.989 \text{ cm} + 1.20 \text{ cm}$$

112.42 cm

$$\frac{(2.34 \times 10^3 \text{ cm})(4.2021 \times 10^{-6} \text{ cm})}{(8.7 \times 10^3 \text{ s})}$$

1.1 x 10⁻⁶ cm² / s

$$154.0 = 3.76 \times Q$$

Q = **41.0**

4. Convert the following quantities: (5 points) Watch sig figs!

157.7 K to °C.

-115.5 °C

9.22 g/cm³ to g/mm³

9.22 x 10⁻³ g/mm³

7.360 cg to ng

7.360 x 10⁷ ng