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1.1-110

10^{-3} is the same as

- (a) 1/1000 only
- (b) 1000 only
- (c) 0.001 only
- (d) 1/1000 and 0.001

1.1-120

5.3×10^{-2} is the same as

- (a) 530
- (b) $1 / 530$
- (c) $5.3 / 100$
- (d) $100 / 5.3$

1.1-125

Which of the following is different?

(a) $1/500$

(b) 0.02

(c) 2×10^{-3}

(d) 500^{-1}

1.1-130

A Nerf ball has a mass of 50.0 grams and a volume of 549 cm³. Its density is

- (a) $(5.49/5.00) \times 10^{-1} \text{ gm/cm}^3$
- (b) $(5.49/5.00) \times 10 \text{ cm}^3/\text{gm}$
- (c) $(5.00/5.49) \times 10^{-1} \text{ gm/cm}^3$
- (d) $(5.00/5.49) \times 10 \text{ cm}^3/\text{gm}$

1.1-210

1 day is how many minutes?

- (a) $(60 / 24)$
- (b) (60×24)
- (c) $(24 / 60)$
- (d) $(1/60)(1/24)$

1.1-215

Breaking a chemical bond involves atomic motion of about an Ångstrom (10^{-10} m).

Atoms in molecules move at about 1 km / s.

It follows that the rupture of a bond is over in about how many seconds?

(a) 10^{-9}

(c) 10^{-13}

(b) 10^{-11}

(d) 10^{-15}

1.1-220

1 liter = 22.54 jiggers and
1 gram = 0.7716 scruples

What is the concentration in grams/liter of a jigger of solution containing a scruple of solute?

- (a) $22.54 / 0.7716$
- (b) 22.54×0.7716
- (c) $0.7716 / 22.54$
- (d) $1 / (22.54 \times 0.7716)$

1.1-230

An experiment calls for Y moles of acetic acid. You have a solution that has a concentration of C moles/liter. How many liters of the solution do you need for the experiment?

(a) C / Y

(b) $C \cdot Y$

(c) Y / C

(d) $Y + C$

1.1-240

How many grams of naphthalene (mol. wt. 128) are required to make up 100 ml of a 0.1 M solution?

(a) 128×10^{-2}

(c) 128×10

(b) $10^{-2} / 128$

(d) $10 / 128$

1.1-250

An ordinary tree is 28% carbon by mass, is about 40 years old, and weighs about 1800 pounds. How many pounds of carbon does an ordinary tree “fix” per year on average?

- (a) $28 \times 40 / 1800$
- (b) $28 \times 1800 / 40$
- (c) $1800 \times 40 / 0.28$
- (d) $0.28 \times 1800 / 40$

1.1-310

$$245.876 + 4.65 + 0.3678 =$$

- (a) 250.8938
- (b) 250.894
- (c) 250.89
- (d) 250.

1.1-320

$$129.578 \times 32.33 =$$

- (a) 4189.
- (b) 4189.3
- (c) 4189.26
- (d) 4189.257

1.1-330

$$129.578 \div 32.33 =$$

- (a) 4.00798
- (b) 4.01
- (c) 4.008
- (d) 4.0