Practice Problems: Measurement

1. Express 549000000 in scientific notation.

   [A] 5.49×10^{-8} [B] 5.49×10^{8} [C] 549×10^{8} [D] 549×10^{6} [E] 54.9×10^{-7}

2. Express 506100 in scientific notation.

   [A] 5.06100×10^{5} [B] 5.1×10^{5} [C] 5×10^{5} [D] 5.061×10^{5} [E] 51×10^{5}

3. Write 4,251 in standard scientific notation.

   [A] 4.251 [B] 4.251×1000 [C] 42.52×10^{2} [D] 4,251 [E] 4.251×10^{3}

4. The number 0.000402 expressed in exponential notation is

   [A] 4.02×10^{3} [B] 4.02×10^{-3} [C] 4.02×10^{-4}

   [D] 4.02×10^{-4} [E] 4.02×10^{-2}

5. One kilogram contains this many grams.

   [A] 1000 [B] 10 [C] 1/100 [D] 1/1000 [E] 100

6. How many milliliters are in 0.020 L?

   [A] 200 mL [B] 0.20 mL [C] 2.0 mL [D] 20. mL [E] 5.0 mL

7. The measurement 4.3×10^{3} g also could be written as

   [A] 4.3 dg [B] 4.3 kg [C] 4.3 pg [D] 4.3 mg [E] 4.3 g

8. How many millimeters are in 251 centimeters?

   [A] 2.51×10^{3} mm [B] 2.51 mm [C] 2.51×10^{2} mm

   [D] 2.51×10^{-2} mm [E] 2.51×10^{1} mm

9. Convert: 1 cm = _____ mm.

10. Convert: 4.96 kg = _____ mg.

11. Convert: 683 mm = _____ cm.

12. Convert: 25 mL = _____ L.

13. One millisecond is equal to how many seconds?

[A] 10^{-3} s [B] 10^{6} s [C] 10^{-6} s [D] 10^{3} s [E] 1 s

14. The fundamental unit of mass in the metric system is the

[A] milliliter [B] kilometer [C] centimeter [D] meter [E] gram

15. A cubic centimeter (cm^3) is equivalent to what other metric volume unit?

[A] millimeter [B] liter [C] centimeter [D] deciliter [E] milliliter

16. The number of millimeters in 0.101 meter is

[A] 9.90×10^{3} mm [B] 1.01×10^{-3} mm [C] 1.01×10^{-4} mm

[D] 1.01×10^{4} mm [E] 1.01×10^{2} mm

17. The number of cubic centimeters (cm^3) in 43.0 mL is

[A] 0.0430 cm^3 [B] 43.0 cm^3 [C] 4.30 cm^3 [D] none of these

18. A student finds that the weight of an empty beaker is 12.024 g. She places a solid in the beaker to give a combined mass of 12.108 g. To how many significant figures is the mass of the solid known?

[A] 4 [B] 2 [C] 3 [D] 5 [E] 1

19. How many significant figures are in the number 4.00700×10^{13}?

[A] none of these [B] 2 [C] 4 [D] 6 [E] 5

20. Convert 258 L to milliliters.

[A] 2.58×10^{3} mL [B] 2.58×10^{5} mL [C] 0.258 mL

[D] 258 mL [E] 2.58 mL

21. Convert 561097 mm to kilometers.

[A] 561.097 km [B] 5.61097×10^{11} km [C] 5.61097 km

[D] 0.561097 km [E] 5610.97 km