Density, Significant Figures in Calculations, Conversion, and Scientific Notation Practice
Chemistry

Name: _____

Date: _____ Hour: _____

1) What is the formula for density? _____

2) What are possible SI units for volume? _____

3) What are possible SI units for mass ? _____

NOTE: To receive credit on questions 4 - 10, you must show your work
Yes, your answers must have the correct number of significant figures

4) Calculate the density of mercury if 100.0 g of mercury occupy a volume of 7.36 cm^3.

D = _____

m = _____

V = _____

5) A student needs 15.0 g of ethyl alcohol for an experiment. If the density of the alcohol is 0.789 g/mL, how many milliliters of alcohol are needed?

D = _____

m = _____

V = _____

6) A sample of carbon tetrachloride, a liquid once used in dry cleaning, has a mass of 39.75 g and a volume of 25.0 mL. What is its density?

D = _____

m = _____

V = _____

7) The density of platinum is 23.4 g/cm^3. Calculate the mass of 75.0 cm^3 of platinum.

D = _____

m = _____

V = _____

8) The density of magnesium is 1.74 g/cm^3. What is the volume of 275 g of this metal?

D = _____

m = _____

V = _____

9) A cube of plastic 1.5 cm on each side has a mass of 1.9 g. What is its density?

D = _____

m = _____

V = _____

10) An experiment required 15.0 g of cyclohexane, whose density is 0.7781 g/mL. What volume of cyclohexane should have been used?

D = _____

m = _____

V = _____

Round the following "calculator" answers to the given number of significant figures:

11) 1.6666 μg to 2 sig figs _____

12) 27.155 s to 3 sig figs _____

13) 2.3145 mg to 3 sig figs _____

14) 150.33 °C to 3 sig figs _____

15) 8.5455 g/cm^3 to 2 sig figs _____

16) 30.050 hm to 2 sig figs _____

Use scientific notation to express the following measurements (to the same # of sig. fig.):

17) 0.000 03 nm _____

18) 55 000 000 N _____

19) 65 940 μm _____

20) 0.010 203 04 s _____

21) 12.73 kPa _____

22) 8 000 001 dag _____

Write out the following scientific notation measurements (so they are NOT in scientific notation):

23) 9.0 x 10^4 pm _____

24) 2.300 x 10^{-4} Gg _____

Do the indicated calculation and write the answer with the appropriate number of significant figures.

25)
2.36 m
3.38 m
0.355 m
+ 1.06 m

26)
0.0853 s
0.0547 s
0.037 s
+ 0.00387 s

27)
350.0 m
- 200 m

28)
27.68 cm
- 14.369 cm

29) 3.15 dm x 2.5 dm x 4.00 dm = _____

30) 0.036 m x 0.02 m = _____

31) 0.075 g ÷ 0.003 mL = _____

32) 3.76 km ÷ 1.62 km = _____

Do the following conversions:

33) How many nanometers are in 0.36 m?

34) How many nanometers are in 3.6×10^{-1} cm?

35) How many seconds are there in a school day (7.00 hours)?

36) How many milliliters are in 9.2 dm^3?

37) 33.9 minutes = _____ days

38) How many milligrams are there in 6.2×10^{-4} kg?