SIG.FIG., SCIENTIFIC NOTATION, AND DENSITY PRACTICE

Do not write on this sheet. Use your own paper.

How many sig.figs. are in the following numbers?

1) -16
2) 5.000×10^{11}
3) 0.009 090
4) 4 010
5) 10 000
6) 2060.
7) 3.50×10^{-5}
8) 80.011
9) 97.0
10) 0.001 0
11) 46.074
12) 0.6

Round each number to two sig.figs.

13) 3.948
14) 11 561.06
15) 6 789.2
16) 112.6
17) 0.000 488 88
18) 119.999

Covert to scientific notation.

19) 0.000 036 920
20) 405.9
21) 2 468.101 214 16
22) 0.001 000 0

Convert to standard notation.

23) 3.0×10^{-3}
24) 6.8710×10^{6}
25) $9.145\ 500 \times 10^{-1}$
26) 7.44×10^{9}

Calculate the answers to the following problems and write the answer in the correct number of sig.figs.

27) 368.190 + 22.8
28) 10.007 / 5.2
29) 3.000 9 - 0.1
30) 58.17 x 6.0
31) 46.7333 + 111.99

Density problems *(some from www.zerobio.com)*:

Solve the following problems showing all work, including equations and units. Answers must be in the proper number if sig.figs. Circle all answers.

32) Calculate the mass of a liquid with density of 3.20 g/mL and volume of 15.0 mL.

33) Calculate the density of a 500.00 g rectangular block with the following dimensions: length=8.0 cm, width=6.0 cm, height=5.0 cm.

34) How much space does 750.00 g of a substance occupy it if has a density of 0.78 g/mL?

35) An irregular object with a mass of 18.00 kg displaces 2.50 L of water when placed in a large overflow container. Calculate the density of the object.

36) What is the mass of a 4.259 g/cm^3 substance which takes up 250.00 cm^3 of space?

37) Calculate the volume of a 125.66 g solid cylinder with a density of 2.60 g/cm^3.

38) If a 78.51 g stone is added to a graduated cylinder, the water level rises from 20 mL to 45 mL. What is the density of the stone?