

SIG.FIG., SCIENTIFIC NOTATION, AND DENSITY PRACTICE – Prac.#6

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

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

- | | | |
|---------------------------|--------------------------|------------|
| 1) -16 | 5) 10000 | 9) 97.0 |
| 2) 5.000×10^{11} | 6) 2060. | 10) 0.0010 |
| 3) 0.009090 | 7) 3.50×10^{-5} | 11) 46.074 |
| 4) 4 010 | 8) 80.011 | 12) 0.6 |

Round each number to two sig.figs.

- | | |
|--------------|----------------|
| 13) 3.948 | 16) 112.6 |
| 14) 11561.06 | 17) 0.00048888 |
| 15) 6789.2 | 18) 119.999 |

Covert to scientific notation.

- | | |
|-----------------|-------------------|
| 19) 0.000036920 | 21) 2468.10121416 |
| 20) 405.9 | 22) 0.0010000 |

Convert to standard notation.

- | | |
|--------------------------|-------------------------------|
| 23) 3.0×10^{-3} | 25) 9.145500×10^{-1} |
| 24) 6.8710×10^6 | 26) 7.44×10^9 |

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

- | | |
|----------------------|------------------------|
| 27) $368.190 + 22.8$ | 30) 58.17×6.0 |
| 28) $10.007 / 5.2$ | 31) $46.7333 + 111.99$ |
| 29) $3.0009 - 0.1$ | |

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 of 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 if it 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?