

Significant Figures

1. How many significant figures do the following numbers have?

1. 956 _____
2. 2.1390 _____
3. 4390 _____
4. 0.500 _____
5. 500 _____
6. 5.9×10^4 _____
7. 0.40001 _____
8. 1.7×10^{-3} _____
9. 650 _____
10. 4.150×10^{-4} _____

2. Perform the following calculations to the correct number of significant figures

- a) $12.0550 + 9.05$
- b) $257.2 - 19.789$
- c) $(6.21 \times 10^3) (0.150)$
- d) $0.0577 \div 0.753$
- e) $27.5 \times 1.82 \div 100.04$
- f) $(2.290 \times 10^6) \div (6.7 \times 10^4)$
- g) $[(28.7 \times 10^5) \div 48.533] + 144.99$

3. Round each of the following numbers to three significant figures:

- a) 342.79513
- b) 9,845.8749
- c) 0.000045389
- d) 2.45555567
- e) 76.89
- f) 56.9971

Scientific Notation

1.

Write these numbers in scientific notation.

$$240000 = \underline{\hspace{2cm}} \quad 9808000 = \underline{\hspace{2cm}}$$

$$5550 = \underline{\hspace{2cm}} \quad 0.091 = \underline{\hspace{2cm}}$$

Write these numbers in regular notation.

$$5.5 \times 10^{-7} = \underline{\hspace{2cm}} \quad 7.1 \times 10^{10} = \underline{\hspace{2cm}}$$

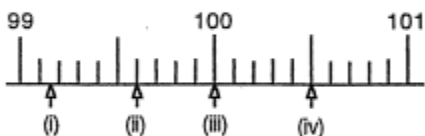
$$5.43 \times 10^3 = \underline{\hspace{2cm}} \quad 1.0 \times 10^3 = \underline{\hspace{2cm}}$$

Reading Measurements



A =

B =

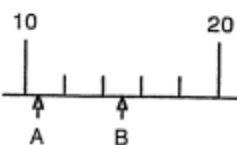


Reading at (i) =

Reading at (ii) =

Reading at (iii) =

Reading at (iv) =



A =

B =

Unit conversion

Solve the following problems, showing the unit cancellation method for each problem.

1. Convert a speed of 88 m/s to its equivalent measurement in cm/s.
2. Convert a density of 9.45 g/L to its equivalent in g/mL.
3. The density of mercury metal is 13.6 g/mL. What is the mass of 3.55 mL of the metal?
4. The density of salt is 2.16 g/mL. What is the mass of 100 mL of this solid?
5. A particle moves through a gas at a speed of 15 km/s. How far will it move in 5.5 s?
6. A solution of barium nitrate contains 61.2 g/L of solution. How many grams of barium nitrate is contained in 2.75 L of this solution?
7. A sample of seawater contains 0.002 45 g of sodium chloride per mL of solution. How much sodium chloride is contained in 50.0 mL of this solution?
8. Convert 73.4 km/h to its equivalent value in m/s.
9. The density of iron is 7.86 g/mL. What volume will be occupied by 45.0 g?
10. The density of helium gas is 0.178 g/L. What would be the mass of 150 L of the gas?
11. A particle moving through a gas at a speed of 45.8 m/s will take how long to travel 25 cm?
12. A sample of seawater contains 6.277 g of sodium chloride per litre of solution. How many mg of sodium chloride would be contained in 25.0 mL of this solution?