Scientific Notation, Significant Figures and Rounding-Off

1. Convert the following numbers to scientific notation:
   a. 9,800,000
   b. 0.0000654
   c. 7,230,000,000,000
   d. 0.004563
   e. 6700.

2. How many significant figures are in each of the following numbers?
   a. 0.04506
   b. 710.6
   c. 0.00070800
   d. 63,000
   e. 7.1×10^5
   f. 0.00716
   g. 5.06720×10^{-3}
   h. 900.
   i. 90,403,050
   j. 820.00

3. Round the following numbers to three significant figures:
   a. 23.4672
   b. 0.0089818
   c. 98855555
   d. 782,100,000
   e. 4000

4. Carry out the following calculations and express the answer with the correct number of significant figures:
   a. 54.83 x 6.8204 x 1.778 =
   b. 14.832 + 123.8 + 17.5 + 218.623 =
   c. $5.134 \times 10^{-3} + 2.648 \times 10^{-2}$ =
   d. 7.5×10^{-2} x 8.32×10^5 =
   e. 56.78 + 121.0 =
   f. $1.5 \times 10^4 \div 3.67 \times 10^{-2}$ =
   g. 345.9 − 23.446 =
   h. 1205.0 + 122.07 + 69.377 =
   i. 0.0003591 + 0.008111 + 0.005000817 =
   j. (0.0457 + 0.0002999) x 0.4051

Scientific Notation, Significant Figures and Rounding-Off
Answers

1. Convert the following numbers to scientific notation:
    a. 9,800,000 9.8×10^{6}
    b. 0.0000654 6.54×10^{-5}
    c. 7,230,000,000,000 7.23×10^{12}
    d. 0.004563 4.563×10^{-3}
    e. 6700. 6.700×10^{3}

2. How many significant figures are in each of the following numbers?
    a. 04506 (4)
    b. 710.6 (4)
    c. 0.00070800 (5)
    d. 63,000 (2 for sure – the rest are undetermined)
    e. 7.1×10^{5} (2)
    f. 0.00716 (3)
    g. 5.06720×10^{-3} (6)
    h. 900. (3)
    i. 90,403,050 (7 for sure – the last digit is undetermined)
    j. 820.00 (5)

3. Round the following numbers to three significant figures:
    a. 23.4672 23.5
    b. 0.0089818 0.00898
    c. 98855555 98,900,000 or 9.89×10^{7}
    d. 782,100,000 782,000,000 or 7.82×10^{8}
    e. 4000 4.00×10^{3}

4. Carry out the following calculations and express the answer with the correct number of significant figures:
    a. 54.83 x 6.8204 x 1.778 = 664.9
    b. 14.832 + 123.8 + 17.5 + 218.623 = 374.8
    c. $5.134 \times 10^{-3} + 2.648 \times 10^{-2}$ = 0.005134 + 0.02648 = 0.03161
    d. 7.5×10^{-2} x 8.32×10^{5} = 6.2×10^{4}
    e. 56.78 + 121.0 = 177.8
    f. $1.5 \times 10^{4} \div 3.67 \times 10^{-2}$ = 4.1×10^{5}
    g. 345.9 − 23.446 = 322.5
    h. 1205.0 + 122.07 + 69.377 = 1396.4
    i. 0.0003591 + 0.008111 + 0.005000817 = 0.013471
    j. (0.0457 + 0.0002999) x 0.4051 = 0.0460 x 0.4051 = 0.0186