

Significant Digits, Rounding Off, Scientific Notation Questions

1. State the number of significant digits in each of the following:

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|-----------|------------|------------|---------------|-------------|
| a) 0.0034 | (d) 1.2300 | (g) 0.067 | (j) 0.00001 | (m) 9.3005 |
| b) 1000 | (e) 3006 | (h) 0.0010 | (k) 0.0000100 | (n) 600.021 |
| c) 102.0 | (f) 102030 | (i) 10200 | (l) 100 | (o) 0.1005 |

2. Change each of the following into correct scientific notation. Round off to one decimal place.

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|-------------------------|------------------------|-----------------------------|--------------------------|
| a) 0.00000581 | (f) 42893 | (k) 2005000 | (p) 2875000 |
| b) 207000 | (g) 4105000 | (l) 3685000 | (q) 4.5050 |
| c) 0.03152 | (h) 0.0003025 | (m) 3.0025 | (r) 1.025 |
| d) 374×10^{-6} | (i) 4000×10^3 | (n) 0.0078×10^{-4} | (s) 40300000 |
| e) 0.00370 | (j) 213 | (o) 0.356 | (t) 984×10^{-2} |

3. Express each of the following in expanded form.

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|--------------------------|---------------------------|
| a) 2.54×10^5 | (d) 2.15×10^{-6} |
| b) 1.01×10^{-3} | (e) 9.22×10^2 |
| c) 3.05×10^7 | (f) 9.22×10^{-2} |

4. Calculate each of the following using correct significant digits.

a) $7 \times 10^4 + 2 \times 10^5$

(l) $6.6 \times 10^5 \div 3.0 \times 10^2$

b) $8 \times 10^{-3} - 7 \times 10^{-4}$

(m) $(3800)(0.0054)(0.0000001) / (430000000)(0.00054)$

c) $(3 \times 10^2)(2 \times 10^3)$

(n) $(2 \times 10^5)^2$

d) $(1.3 \times 10^{-3})(4 \times 10^{-5})$

(o) $(2 \times 10^4)^2(3 \times 10^6)^3$

e) $5 \times 10^{-2} + 3 \times 10^{-4}$

(p) $4 \times 10^5 - 1 \times 10^6$

f) $(8 \times 10^{-5})(3 \times 10^7)$

(q) $(-9 \times 10^{17})(6 \times 10^{-18})$

g) $(3 \times 10^{-3})^3$

(r) $(-3 \times 10^{-3})^3$

h) $6.201 + 7.4 + 0.68 + 12.0$

(s) $10.8 + 8.264$

i) $475 - 0.4168$

(t) $(131)(2.3)$

j) $(3.2145)(4.23)$

(u) $20.2 / 7.41$

k) $3.1416 / 12.4$