Name: ANSWERS
Period:

Significant Figures Homework

A. Determine the number of significant digits in the following numbers.

1. 2 or 3 or 4 **5600**
2. 4 **45.00**
3. 4 **105.0**
4. 3 **0.00565**
5. 4 **0.005400**
6. 5 **89.543**
7. 5 or 6 or 7 **5, 056, 300**
8. 6 **95.0540**
9. 2 or ... or 6 or 7 **93, 000, 000**

B. Perform the indicated operations and express your answers to the correct number of significant figures

10. 55 **(6.92)(7.9)**
11. 74.2 **(8.245)(9.00)**
12. 0.684 **(4.46) / (6.52)**
13. 1.20 **(9.825) / (8.20)**
14. 3.1 **(8.95)(9.162) / (4.25)(6.3)**

C. Perform the indicated operations and express your answer to the correct number of significant figures

15. 15.2 **5.50 + 0.528 + 9.2**
16. 9940 **420 + 8900 + 620**
17. −0.51 **0.00526 – 0.52**
18. 846 **820.0 + 19.5 + 6**
19. 3379.4 **4, 285.75 – 520.1 – 386.255**
20. 492 **(0.526)(895) + 20.8**

D. Convert the following numbers into standard scientific notation with the appropriate significant figures.

21. 2.135×10 **21.35**
22. 2×10^5 **200, 000**
23. 8.750×10^0 **8.750**
24. 2×10^{-2} **0.02**
25. 1.212×10^2 **121.2000**
26. 9.0×10^{-6} **0.0000090**
27. 8.23×10^{-4} **0.000823**
28. 3.8002×10^4 **38002**
29. 1.236×10^5 **12.36×10^4**
30. 5.3249×10^{-1} **532.49×10^{-3}**

E. Convert the following numbers from scientific notation into standard numbers.

31. 72 300 **7.23×10^4**
32. 819.3 **8.193×10^2**
33. 0.00198 **1.98×10^{-3}**
34. 0.000 000 7510 **7.510×10^{-7}**
35. 12 560 **12.56×10^3** – not in sci. notation

Date: Name: Class:

Reinforcement
Chapter 1
BLM 1-2

Reporting Significant Digits in Calculations

Goal Reinforce your understanding of significant digits.

Questions

1. State the number of significant figures in each of the following values:
   - (a) 3570 3 or 4
   - (b) 3.57×10^3 3
   - (c) 41.400 5
   - (d) 0.51 2
   - (e) 0.000 572 3
   - (f) 0.009 00 3
   - (g) 41.50×10^{-4} 4
   - (h) $0.007\ 160 \times 10^5$ 4
   - (i) $1.234\ 00 \times 10^8$ 6
   - (j) $0.000\ 410\ 0 \times 10^7$ 4

2. Perform the following operations. Express your answer using the correct number of significant digits.
   - (a) $15.1 + 75.32$ = 90.4
   - (b) $178.904\ 56 - 125.805\ 5$ = 53.0991
   - (c) $4.55 \times 10^{-5} - 3.1 \times 10^{-5}$ = 1.5×10^{-5} (1.45)
   - (d) $0.000\ 159 + 4.0074$ = 4.0076
   - (e) $1.805 \times 10^4 + 5.89 \times 10^4$ = 7.70×10^4
   - (f) $0.000\ 817 - 0.000\ 048\ 1$ = 0.000769
   - (g) $8.166 \times 10^5 - 7.819 \times 10^5$ = 0.347×10^5
   - (h) $45.128 + 8.501\ 87 - 42.18$ = 11.45
   - (i) $5.677 \times 10^{-6} + 7.785 \times 10^{-6}$ = 13.462×10^{-6}
   - (j) $8.75 \times 10^{-9} + 6.1157 \times 10^{-9}$ = 14.87×10^{-9}
   - (k) $1.99 \div 3.1$ = 0.64
   - (l) $1200.0 \div 3.0$ = 400 or 4.0×10^2
   - (m) $5.32 \times 10^{-4} \div 4.218 \times 10^{-8}$ = 12600 or 1.26×10^4
   - (n) 45.32×2.3 = 100 or 1.0×10^2
   - (o) $0.024\ 00 \div 6.000$ = 0.004000
   - (p) 12.4×0.30 = 3.7
   - (q) $(5.50 \times 10^8) \div (4 \times 10^5)$ = 1000 or 1×10^3
   - (r) $7.4 \div 3$ = 2
   - (s) $4.75 \div 5$ = 1
   - (t) $2.5 \times 6.700 \div 0.891$ = 19