

# Ch11 Rounding Off and Significant Digits

Name \_\_\_\_\_

Indicate the significant digits in each measurement.

- |           |             |            |            |
|-----------|-------------|------------|------------|
| 1) 40.00g | 2) 0.045kg  | 3) 409mm   | 4) 0.0098L |
| 5) 520mm  | 6) 3009.0cm | 7) 0.57km  | 8) 654g    |
| 9) 41.0s  | 10) 530L    | 11) 8.70km | 12) 4990mm |

Rewrite the following values using significant digits instead of showing the uncertainty separately.

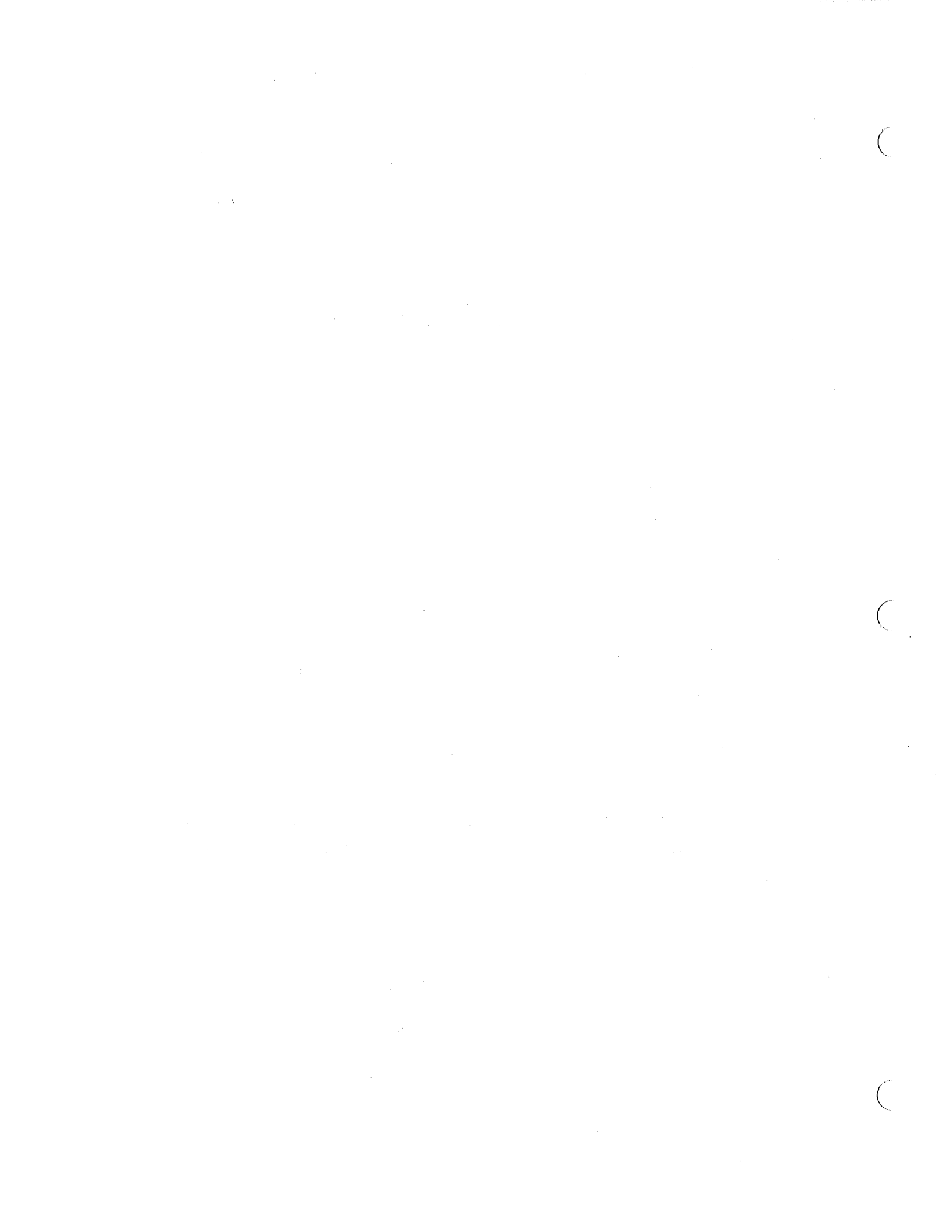
- |                        |       |                       |       |
|------------------------|-------|-----------------------|-------|
| 13) $48.3 \pm 4L$      | _____ | 14) $56.48 \pm 0.2mm$ | _____ |
| 15) $3.221 \pm 0.04mL$ | _____ | 16) $2740 \pm 300g$   | _____ |

After doing an addition or a subtraction, you will have to round off the value showing on your calculator to a certain column to record the significant digits correctly. Round the following "calculator results" to the column indicated.

- |                          |       |                         |       |
|--------------------------|-------|-------------------------|-------|
| 17) 46.933 (hundredths)  | _____ | 18) 236 (tens)          | _____ |
| 19) 267.6 (ones)         | _____ | 20) 3459 (hundreds)     | _____ |
| 21) 0.9555 (thousandths) | _____ | 22) 0.0649 (hundredths) | _____ |
| 23) 273.4 (tens)         | _____ | 24) 6666 (hundreds)     | _____ |

After doing a multiplication or a division, you will have to round off the value showing on your calculator to a certain number of significant digits. Round the following "calculator results" to show 3 significant digits.

- |             |       |              |       |
|-------------|-------|--------------|-------|
| 25) 2348.7  | _____ | 26) 28.57332 | _____ |
| 27) 0.00664 | _____ | 28) 45555    | _____ |
| 29) 20.044  | _____ | 30) 0.00111  | _____ |
| 31) 567.89  | _____ | 32) 0.09999  | _____ |
| 33) 3.0011  | _____ | 34) 1234     | _____ |
| 35) 875890  | _____ | 36) 2.03567  | _____ |



The following calculations were done with a calculator. Round off the answers according to the rules of significant digits. Rewrite the answer in scientific notation only if necessary.

**Remember:** Adding or subtracting: think "columns".

Multiplying or dividing: think "least number".

37)  $4.57 + 2.444 + 6.1 = 13.114$  -----> \_\_\_\_\_

38)  $3.67 \div 4.222 = 0.8692563$  -----> \_\_\_\_\_

39)  $245 - 1.37 = 243.63$  -----> \_\_\_\_\_

40)  $12.4 + 26.01 + 23 = 61.41$  -----> \_\_\_\_\_

41)  $2.0003 \times 125 = 250.0375$  -----> \_\_\_\_\_

42)  $650 + 2.4 = 652.4$  -----> \_\_\_\_\_

43)  $0.025 \div 4.35 = 0.0057471$  -----> \_\_\_\_\_

44)  $560 + 14 = 574$  -----> \_\_\_\_\_

45)  $1520 \times 0.0493 = 74.936$  -----> \_\_\_\_\_

46)  $68.98 - 2.477 = 66.503$  -----> \_\_\_\_\_

47)  $40.0 \times 2.00 = 80$  -----> \_\_\_\_\_

48)  $0.090 \div 1.003 = 0.0897308$  -----> \_\_\_\_\_

49)  $340 + 3.7 = 343.7$  -----> \_\_\_\_\_

50)  $3.662 \times 3.4569 = 12.659168$  -----> \_\_\_\_\_