

Ch11 Rounding Off and Significant Digits #2

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) $4.57 + 2.444 + 6.1 = \boxed{13.114}$ -----> _____

38) $3.67 \div 4.222 = \boxed{0.8692563}$ -----> _____

39) $245 - 1.37 = \boxed{243.63}$ -----> _____

40) $12.4 + 26.01 + 23 = \boxed{61.41}$ -----> _____

41) $2.0003 \times 125 = \boxed{250.0375}$ -----> _____

42) $650 + 2.4 = \boxed{652.4}$ -----> _____

43) $0.025 \div 4.35 = \boxed{0.0057471}$ -----> _____

44) $560 + 14 = \boxed{574}$ -----> _____

45) $1520 \times 0.0493 = \boxed{74.936}$ -----> _____

46) $68.981 - 2.477 = \boxed{66.503}$ -----> _____

47) $40.0 \times 2.00 = \boxed{80}$ -----> _____

48) $0.090 \div 1.003 = \boxed{0.0897308}$ -----> _____

49) $340 + 3.7 = \boxed{343.7}$ -----> _____

50) $3.662 \times 3.4569 = \boxed{12.659168}$ -----> _____