CALCULATIONS USING SIGNIFICANT FIGURES

Name _____

When multiplying and dividing, limit and round to the least number of significant figures in any of the factors.

Example 1: 23.0 cm x 432 cm x 19 cm = 188,784 cm^3

The answer is expressed as 190,000 cm^3 since 19 cm has only two significant figures.

When adding and subtracting, limit and round your answer to the least number of decimal places in any of the numbers that make up your answer.

Example 2: 123.25 mL + 46.0 mL + 86.257 mL = 255.507 mL

The answer is expressed as 255.5 mL since 46.0 mL has only one decimal place.

Perform the following operations expressing the answer in the correct number of significant figures.

1. 1.35 m x 2.467 m = _____
2. 1,035 $m^2 \div$ 42 m = _____
3. 12.01 mL + 35.2 mL + 6 mL = _____
4. 55.46 g − 28.9 g = _____
5. .021 cm x 3.2 cm x 100.1 cm = _____
6. 0.15 cm + 1.15 cm + 2.051 cm = _____
7. 150 $L^3 \div$ 4 L = _____
8. 505 kg − 450.25 kg = _____
9. 1.252 mm x 0.115 mm x 0.012 mm = _____
10. 1.278 x 10^3 m^2 + 1.4267 x 10^2 m = _____

Significant Figures

Determine the number of significant figures in each of the following:

_____a. 6.751 m

_____b. 0.0157 kg

_____c. 28.00 L

_____d. 2500 m

_____e. 0.07002 dm

_____f. 30.07 mL

_____g. 3×10^{34} g

_____h. 0.0067 mg

_____i. 0.0200 cm

_____j. 2.60×10^{8} m

_____k. 54.52

_____l. 0.1209 mL

_____m. 2.6900 kg

_____n. 43.07 m

_____0.106 km

Express each answer using the correct number of significant figures.

Add

a. 16.5 cm + 8 cm + 4.37 cm = _____

b. 13.25 g + 10.00 g + 9.6 g = _____

c. 4.5 cm + 375 mm + 25.9 dm = _____

Subtract

a. 23.27 km - 12.058 km = _____

b. 13.57 g - 6.3 g = _____

c. 5.805 L - 385.2 mL = _____

Multiply

a. 2.6 cm X 3.78 cm = _____

b. 6.50 m X 0.37 m = _____

c. 1.4 m X 8 m X 75.85 m = _____

Divide

a. $35\ cm^2$ / 0.62 cm = _____

b. 0.75 g / $0.003\ cm^3$ = _____

c. 6.50 m / 9.2 m = _____

Rank these numbers from smallest to largest using numbers 1 through 8.

_____a. 5.3×10^{4}

_____b. 57×10^{3}

_____c. 4.9×10^{-2}

_____d. 6230

_____e. 0.0057

_____f. 5.1×10^{-3}

_____g. 0.0072×10^{2}

_____h. 2×10^{6}

Change these numbers into scientific notation or write as a regular number. Watch out for significant figures.

a. 68902 _____

b. 0.754 _____

c. 248.0 _____

d. 3000 _____

e. 540.0 _____

f. 77900.34 _____

g. 0.000385 _____

h. 4.5×10^{3} _____

i. 8.30×10^{2} _____

j. 9.080×10^{2} _____