Sig Figs

PRACTICE

1. Perform the following calculations and express the results in the correct units and number of significant figures:
   a. 22.0 m + 5.28 m + 15.5 m
   b. 0.042 kg + 1.229 kg + 0.502 kg
   c. 170 cm^2 + 3.5 cm^2 − 28 cm^2
   d. 0.003 L + 0.0048 L + 0.100 L
   e. 24.50 dL + 4.30 dL + 10.2 dL
   f. 3200 mg + 325 mg − 688 mg
   g. 14 000 kg + 8000 kg + 590 kg

ADDITIONAL PROBLEMS

1. Determine the number of significant figures in the following measurements:
   a. 0.0120 m
   b. 100.5 mL
   c. 101 g
   d. 350 cm^2
   e. 0.97 km
   f. 1000 kg
   g. 180. mm
   h. 0.4936 L
   i. 0.020 700 s
2. Round the following quantities to the specified number of significant figures:
   a. 5 487 129 m to three significant figures
   b. 0.013 479 265 mL to six significant figures
   c. 31 947.972 cm^2 to four significant figures
   d. 192.6739 m^2 to five significant figures
   e. 786.9164 cm to two significant figures
   f. 389 277 600 J to six significant figures
   g. 225 834.762 cm^3 to seven significant figures

3. Perform the following calculations & express the answer in the correct units and number of significant figures.
   a. 651 cm × 75 cm
   b. 7.835 kg ÷ 2.5 L
   c. 14.75 L ÷ 1.20 s
   d. 360 cm × 51 cm × 9.07 cm
   e. 5.18 m × 0.77 m × 10.22 m
   f. 34.95 g ÷ 11.169 cm^3
4. Perform the following calculations, and express the answer in the correct units and number of significant figures.
   a. 7.945 J + 82.3 J − 0.02 J
   b. 0.0012 m − 0.000 45 m − 0.000 11 m
   c. 500 g + 432 g + 2 g
   d. 31.2 kPa + 0.0035 kPa − 0.147 kPa
   e. 312 dL − 31.2 dL − 3.12 dL
   f. 1701 kg + 50 kg + 43 kg
5. A rectangle measures 87.59 cm by 35.1 mm. Express its area with the proper number of significant figures in the specified unit:
   a. in cm^2
   b. in mm^2
   c. in m^2
6. A box measures 900. mm by 31.5 mm by 6.3 cm. State its volume with the proper number of significant figures in the specified unit:
   a. in cm^3
   b. in m^3
   c. in mm^3
7. A 125 mL sample of liquid has a mass of 0.16 kg. What is the density of the liquid in the following measurements?
   a. kg/m^3
   b. g/mL
   c. kg/dm^3
8. Perform the following calculations, and express the results in the correct units and with the proper number of significant figures.
   a. 13.75 mm × 10.1 mm × 0.91 mm
   b. 89.4 cm^2 × 4.8 cm
   c. 14.9 m^3 ÷ 3.0 m^2
   d. 6.975 m × 30 m × 21.5 m