## Sig Figs and Sci Not Extra Practice name:

1. Determine the number of significant figures in the following measurements:

a. 0.0120 m \_\_\_\_\_ f. 1000 kg \_\_\_\_\_\_

b. 100.5 mL \_\_\_\_\_ g. 180.10 mm\_\_\_\_\_\_

c. 101 g \_\_\_\_\_\_ h. 0.4936 L \_\_\_\_\_\_

2. Round the following quantities to the specified number of significant figures using scientific notation:

a. 5 487 129 m to three significant figures \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. 0.013 479 265 mL to six significant figures \_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. 31 947.972 cm2 to four significant figures \_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. 192.6739 m2 to five significant figures \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Express the following quantities in scientific notation and then tell the number of sig figs:

|  |  |  |
| --- | --- | --- |
|  | Sci Not | # of Sig Figs |
| 158,000 km |  |  |
| 0.000009 782 L |  |  |
| 837,100,000 cm3 |  |  |
| 6 500,000,000 mm2 |  |  |
| 0.00593 g |  |  |
| 12,552,000 J |  |  |
| 0.000008 004 g/L |  |  |
| 1,050,000,000 Hz |  |  |
| 0.010995 kg |  |  |
| 0.00000000613 m |  |  |

4. Perform the following calculations, and express the result in scientific notation with the correct number of significant figures:

a. 2.48 × 102 kg + 9.17 × 103 kg + 7.2 × 101 kg

b. 4.07 × 10−5 mg + 3.966 × 10−4 mg + 7.1 × 10−2 mg

c. 1.39 × 104 m3 + 6.52 × 102 m3 − 4.8 × 103 m3

d. 7.70 × 10−9 m − 3.95 × 10−8 m + 1.88 × 10−7 m

e. 1.111 × 105 J + 5.82 × 104 J + 3.01 × 106 J

f. 9.81 × 1027 molecules + 3.18 × 1025 molecules − 2.09 × 1026 molecules

g. 1.36 × 107 cm + 3.456 × 106 cm − 1.01 × 107 cm + 5.122 × 105 cm

7. 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. 6.975 m × 30 m × 21.5 m