

1. How many significant figures are in each of these numbers?

1.221 _____ 24 _____ 95.37 _____ 1.28×10^2 _____ 3.1×10^{-1} _____ 1234.56789 _____ 7 _____

2. Rules for whether zeroes count as significant figures! Read the rules and fill in the blanks.

a. Zeroes in between two non-zeroes always count as significant figures.

For example, 6008 has 4 significant figures, 34031 has _____ significant figures, .230004 has 6 significant figures.

b. Zeroes on the left side of a number never count as significant figures.

For example, 0.000011 has 2 significant figures.

0.733 has 3 significant figures.

0.003 has 1 significant figure

0.00044 has _____ significant figures.

.088 has _____ significant figures.

0.000301 has _____ significant figures

c. Zeroes on the right side of a number sometimes* count as significant figures.

Examples: 0.003 has 1 sig. fig.

0.0030 has 2 sig figs

350 has 2 sig. figs.

350. has 3 sig. figs

350.0 has 4 sig. figs

87100 has 3 sig figs.

87100. has 5 sig figs.

87100.0 has 6 sig figs.

8.710×10^4 has 4 sig. figs.

0.030000 has _____ sig figs.

440 has _____ sig figs.

440.0 has _____ sig figs

440. has _____ sig figs

* What determines whether "right side" zeroes count as significant figures?

5. How many significant figures are in each of these numbers?

0.0023 _____

1.20×10^3 _____

0.00002070 _____

8×10^{-2} _____

0.410 _____

600 _____

0.004 _____

0.0110 _____

707 _____

600. _____

24.40 _____

50. _____

6. Round or rewrite the given number so that it has 3 sig. figs., and so it has 2 sig. figs.

Number

with 3 s.f. _____

with 2 s.f. _____

90

11.48

7

436.2318

0.02078

0.0154449

0.040611

18.921

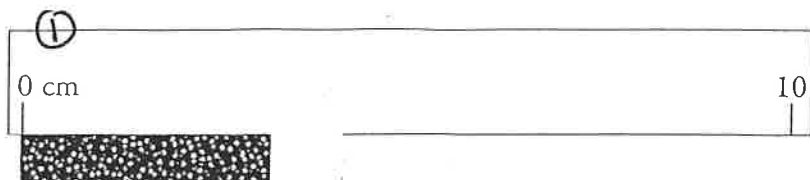
18.981

3.5

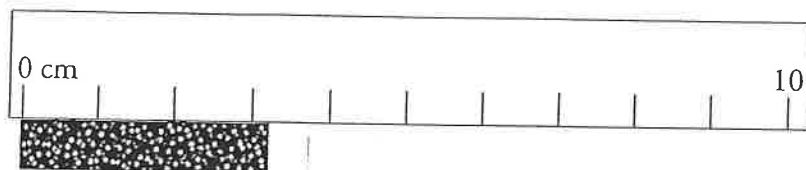
0.0037921

30.28

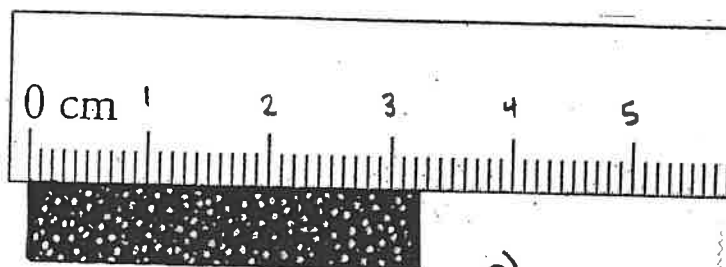
WS 2.0 Part I: Reporting data to the correct number of significant figures!



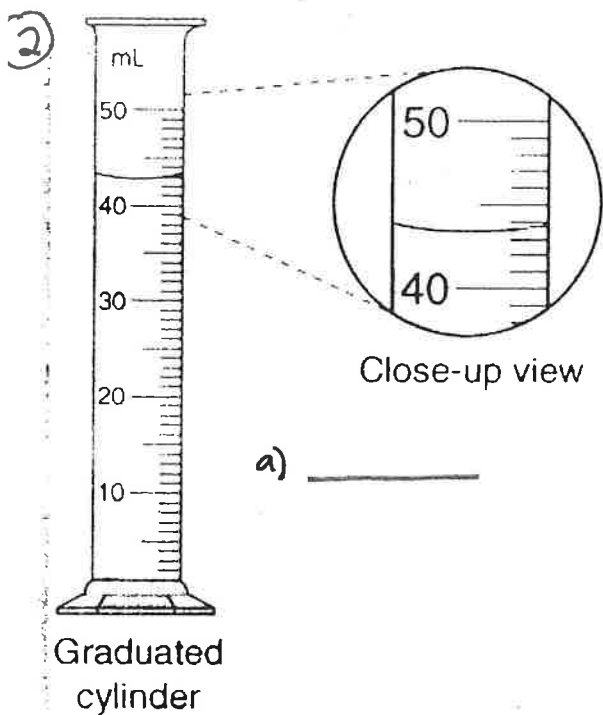
a) _____



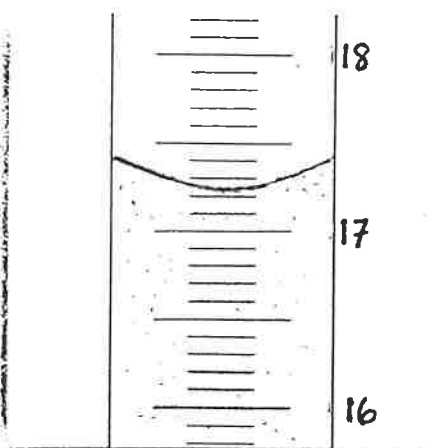
b) _____



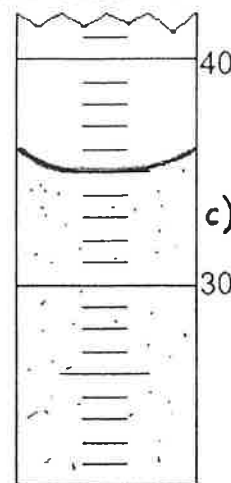
c) _____



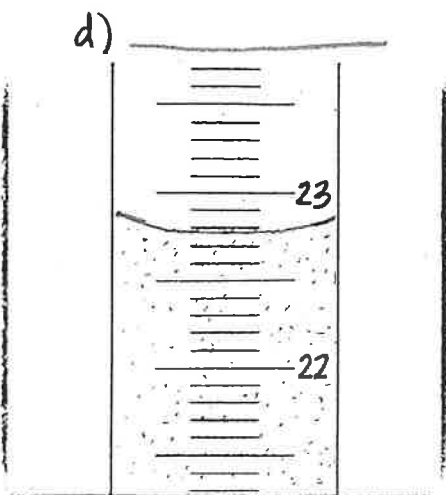
a) _____



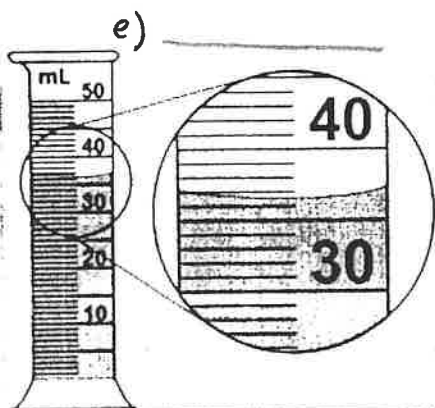
b) _____



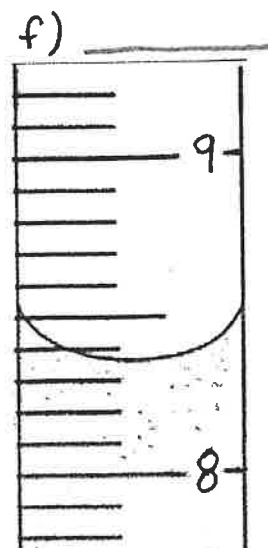
c) _____



d) _____



e) _____



f) _____

7. Rewrite each number in scientific notation so that it keeps the same number of significant figures as it started with.

2150. _____	300 _____	0.0070 _____
2150 _____	310 _____	0.000006780 _____
0.00025 _____	310.0 _____	0.11240 _____
0.0002500 _____	5.2 _____	0.007 _____

8. Round or rewrite each number so that it has the number of sig. figs. indicated in parentheses next to the blank. Use scientific notation only if it is necessary for reporting the correct number of significant figures.

80 ----> _____ (3)

80 ----> _____ (2)

800 ----> _____ (3)

800 ----> _____ (2)

3.482 ----> _____ (3)

3.482 ----> _____ (2)

6000 ----> _____ (3)

6000 ----> _____ (4)

6000 ----> _____ (2)

4 ----> _____ (3)

0.0026981871 ----> _____ (1)

0.0026981871 ----> _____ (2)

0.0026981871 ----> _____ (3)

729 ----> _____ (2)

0.00068 ----> _____ (4)

181000 ----> _____ (6)

181000 ----> _____ (2)

181000 ----> _____ (5)

12530 ----> _____ (2)

101 ----> _____ (2)

101 ----> _____ (1)

50 ----> _____ (4)

33000 ----> _____ (3)

440022.11 ----> _____ (2)

440022.11 ----> _____ (3)

888111 ----> _____ (3)

888111 ----> _____ (2)

0.0030087 ----> _____ (2)

0.0030087 ----> _____ (3)

700.0 ----> _____ (2)

0.002911 ----> _____ (1)

0.002911 ----> _____ (5)

2911 ----> _____ (3)

2911 ----> _____ (2)

700000 ----> _____ (3)

700000 ----> _____ (7)

6684.328 ----> _____ (3)

6684.328 ----> _____ (2)

0.0009 ----> _____ (3)

0.034128 ----> _____ (3)

564.9999 ----> _____ (2)

564.9999 ----> _____ (3)

18000 ----> _____ (1)

18000 ----> _____ (5)

18000 ----> _____ (3)

Ban Dihydrogen Monoxide!

The Invisible Killer

Dihydrogen monoxide is colorless, odorless, tasteless, and **kills** uncounted thousands of people every year. Most of these deaths are caused by accidental inhalation of DHMO, but the dangers of dihydrogen monoxide do not end there. Prolonged exposure to its solid form causes severe tissue damage. Symptoms of DHMO ingestion can include excessive sweating and urination, and possibly a bloated feeling, nausea, vomiting and body electrolyte imbalance. For those who have become dependent, DHMO withdrawal means certain death.

Dihydrogen monoxide:

- is also known as hydroxyl acid, and is the major component of acid rain.
- contributes to the "greenhouse effect."
- may cause severe burns.
- contributes to the erosion of our natural landscape.
- accelerates corrosion and rusting of many metals.
- may cause electrical failures and decreased effectiveness of automobile brakes.
- has been found in excised tumors of terminal cancer patients.

Contamination Is Reaching Epidemic Proportions!

Quantities of dihydrogen monoxide have been found in almost every stream, lake, and reservoir in America today. But the pollution is global, and the contaminant has even been found in Antarctic ice. DHMO has caused **millions** of dollars of property damage in the midwest, and recently California.

Despite the danger, dihydrogen monoxide is often used:

- as an industrial solvent and coolant.
- in nuclear power plants.
- in the production of styrofoam.
- as a fire retardant.
- in many forms of cruel animal research.
- in the distribution of pesticides. Even after washing, produce remains contaminated by this chemical.
- as an additive in certain "junk-foods" and other food products.

Companies dump waste DHMO into rivers and the ocean, and nothing can be done to stop them because this practice is *still legal*. The impact on wildlife is *extreme*, and we cannot afford to ignore it any longer!

The Horror Must Be Stopped!

The American government has **refused** to ban the production, distribution, or use of this damaging chemical due to its "importance to the economic health of this nation." In fact, the navy and other military organizations are conducting experiments with DHMO, and designing multi-billion dollar devices to control and utilize it during **warfare** situations. Hundreds of military research facilities receive tons of it through a highly sophisticated underground distribution network. Many store large quantities for later use.

It's Not Too Late!

Act **NOW** to prevent further **contamination**. Find out more about this **dangerous** chemical. What you don't know **can** hurt you and others throughout the world. Send email to no_dhmo@circus.com, or a SASE to:

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Santa Cruz CA, 95060