

## CONCEPT: SIGNIFICANT FIGURES

- Significant figures indicate the level of \_\_\_\_\_ involved with measurements and recordings.
  - A number with more significant figures is more \_\_\_\_\_.
  - Determining the number of significant figures for any given value can be easy depending on how you do it.

**Significant Figure Rules (HARD)**

1. Non-zero digits **ARE** significant.
2. Any zeros between two significant digits **ARE** significant.
3. Leading zeros are **NOT** significant.
4. A final zero or trailing zeros in the decimal portion **ARE** significant.
5. Trailing zeros in a whole number with the decimal point shown **ARE** significant.
6. Trailing zeros in a whole number with no decimal point are **NOT** significant.
7. For a number in scientific notation:  $N \times 10^x$ , all digits comprising N ARE significant while following the first 6 rules.

**Significant Figure Rules (EASY)**

1. If your number has a decimal point move from \_\_\_\_\_ to \_\_\_\_\_.
  - Start counting once you get to your first non-zero number and keep counting until the end.

0.000250
2. If your number has NO decimal point move from \_\_\_\_\_ to \_\_\_\_\_.
  - Start counting once you get to your first non-zero number and keep counting until the end.

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**EXAMPLE 1:** How many sig figs does each number contain?

(1) 0.0001010 m

(2) 10030 s

(3)  $2.00 \times 10^3$  m

(4) 14 people

- Multiplication/Division: Measurement with least \_\_\_\_\_ determines final answer.
- Addition/Subtraction: Measurement with least \_\_\_\_\_ determines final answer.

**EXAMPLE 2:** Perform the following calculations to the right number of sig figs:

$$\frac{(0.999 + 1.01) \cdot (15.1 - 0.815)}{(0.010)(16) + (33.3 + 7.5)}$$

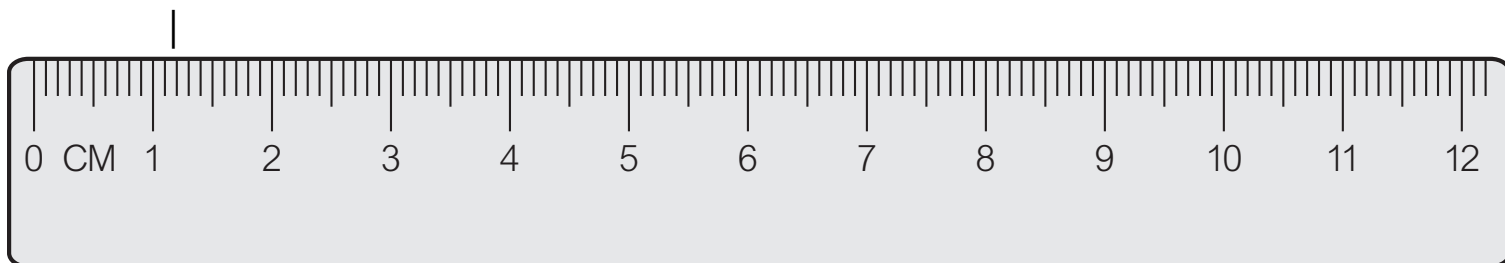
### PRACTICE: SIGNIFICANT FIGURES

**EXAMPLE:** Read the water level with the correct number of significant figures.

- A) 6.80 mL
- B) 7 mL
- C) 7.0 mL
- D) 7.00 mL
- E) 7.20 mL

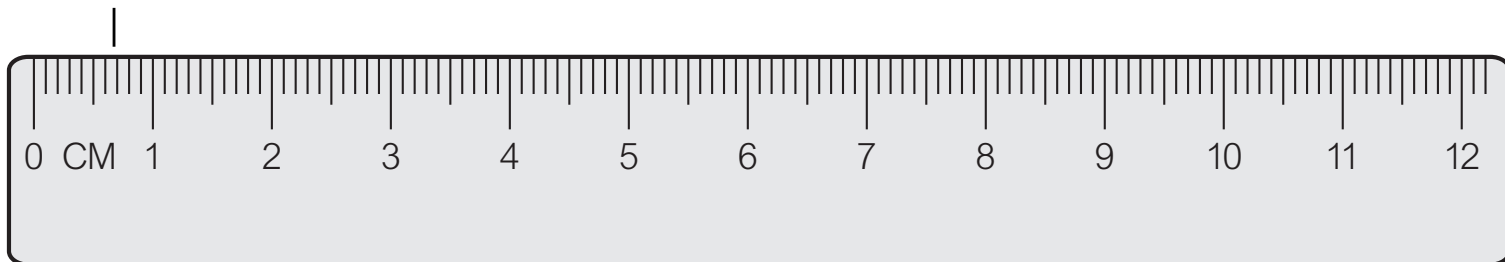


**PRACTICE 1:** Read the ruler measurement to the correct number of significant figures.



- A) 1.2
- B) 1.170
- C) 1.17
- D) 1.20
- E) 1.10

**PRACTICE 2:** Read the ruler measurement to the correct number of significant figures.



- A) 0.7
- B) 0.6
- C) 0.70
- D) 0.68
- E) 0.60