

Calculating with Measurements

When measuring, precision is the level of detail of the measurement. When performing calculations with measurements, the calculated value is no more precise than the original measurements.

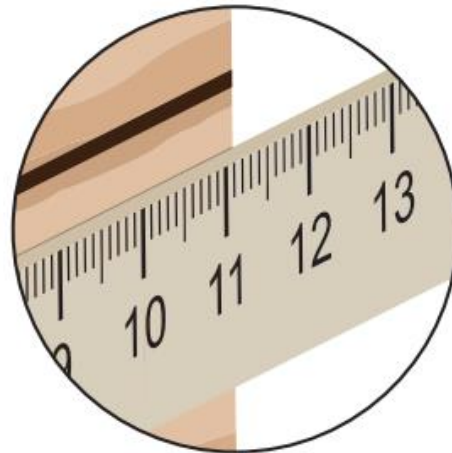


You use a centimeter ruler to measure the dimensions of the jewelry box shown. Estimate the volume of the jewelry box.

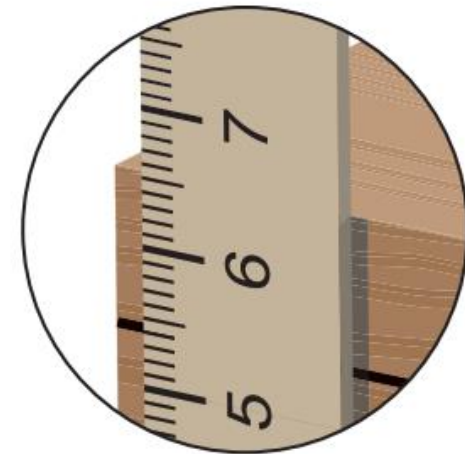
Length



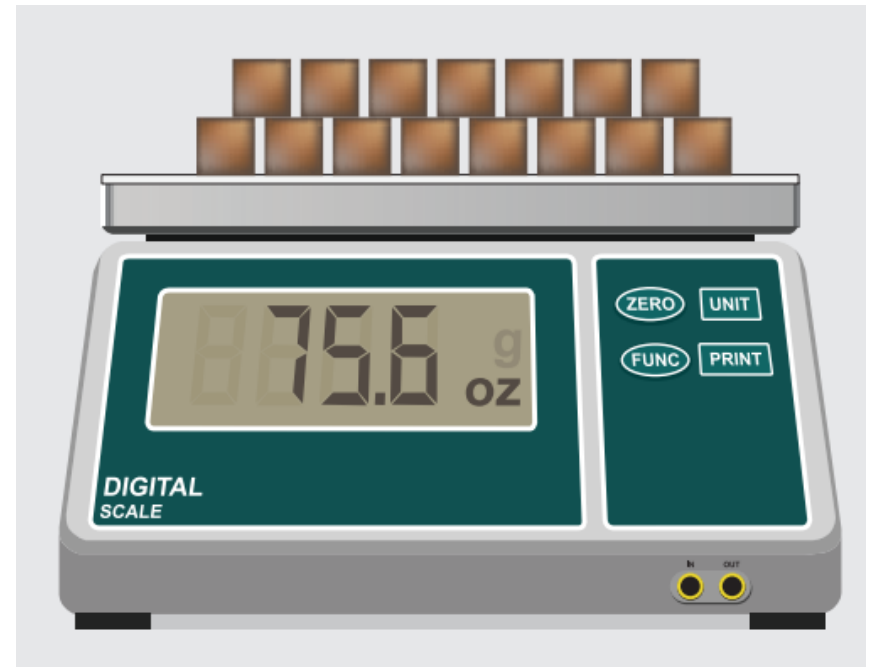
Width



Height



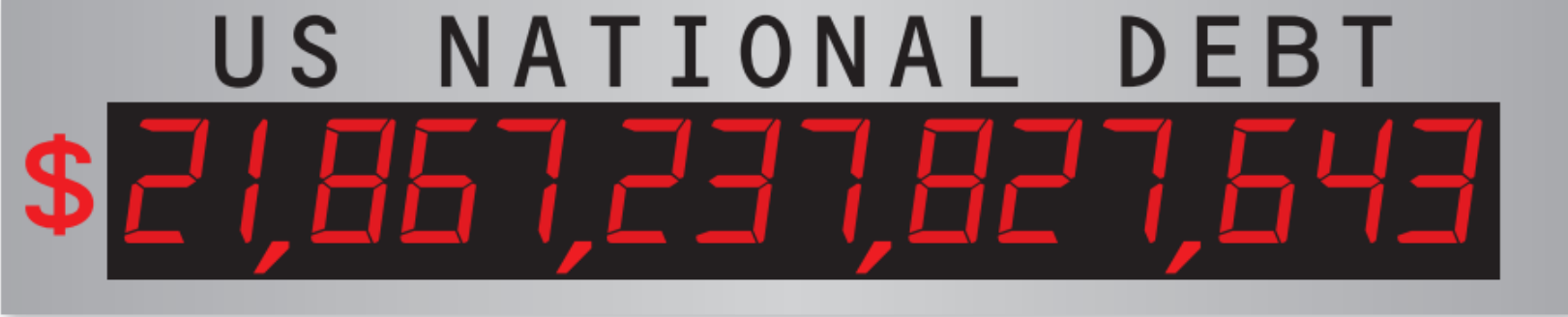
A chemist is measuring the weight (in ounces) of 15 equal samples of a substance on the electronic balance at once. Estimate the weight of each sample. Explain your reasoning.



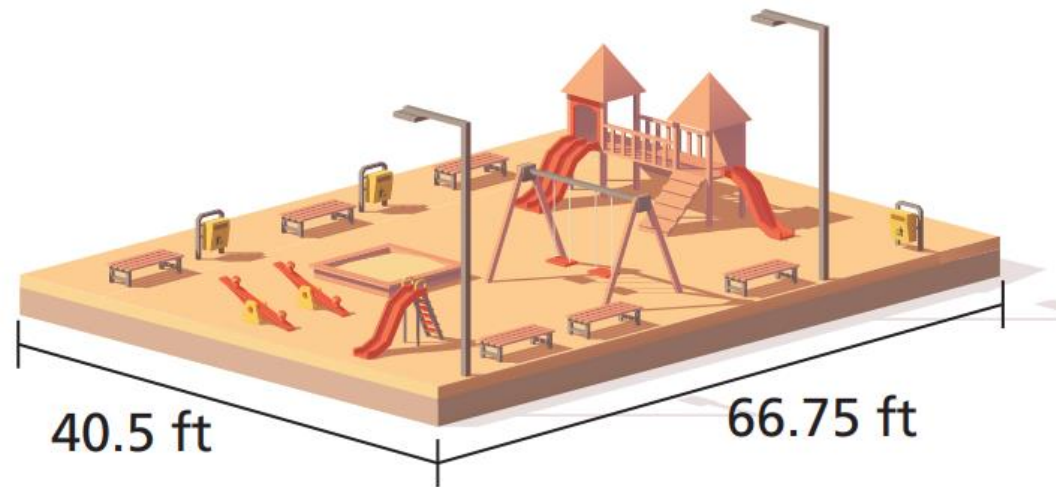
Estimating Results

Accuracy refers to how close a measured value is to the actual value. The accuracy of measurements may affect how you decide to state answers when performing calculations with them.

The population of the United States in 2018 was about 328,181,510. The figure below shows the national debt for the United States as reported in 2018. Estimate the United States national debt per capita.

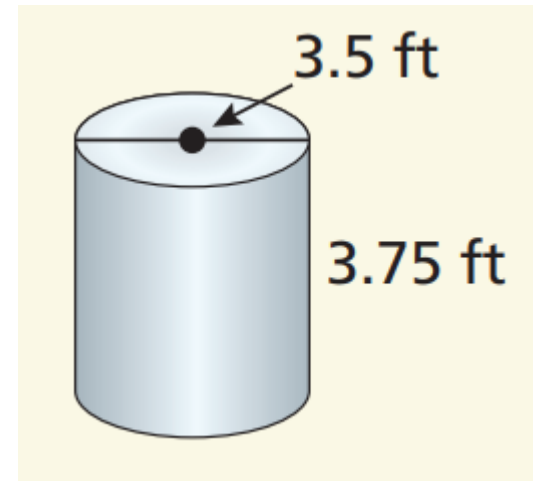


The surface of a city playground is being covered with rubber mulch. A city worker measures the dimensions of the playground as shown. The recommended depth of the mulch is 6 inches. Estimate the volume of mulch needed to cover the surface.



A 1-ton bag of mulch contains about 3 cubic yards of mulch.
How many bags of mulch are needed to cover the surface of
the playground?

You measure a cylindrical water tank as shown. Estimate the amount of water the tank can hold. If a water cooler can hold about 1155 cubic inches of water. How many water coolers can you fill when the water tank is full?



Bleach type	Concentration	Size of bottle (fluid ounces)	Price
Ultra	6.0%	64	\$2.49
Regular	5.3%	128	\$3.99
Concentrated	8.3%	121	\$6.99