

# **MEASUREMENT & GRAPHING REVIEW**

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# MEASUREMENT REVIEW



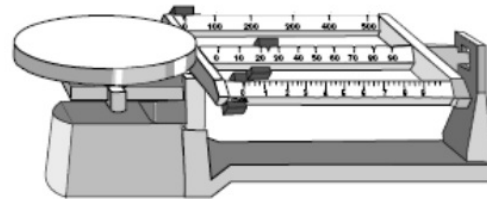
When scientists conduct experiments, they must use tools to measure what is happening. It is important to choose the right tool for what is being measured.

Scientific measuring tools include:

- ◆ balance scale
- ◆ ruler
- ◆ thermometer
- ◆ graduated cylinder

## MEASUREMENT REVIEW

Balance scales are used to determine the mass of an object. Mass is measured in grams. Mass is a measure of how much matter there is in an object. The mass of an object doesn't change. The weight of an object is changes based on gravity. A person will have the same mass on Earth, Mars or the moon, but his weight on the moon will be  $\frac{1}{6}$  of what it is on Earth and will be  $\frac{1}{3}$  as much on Mars.



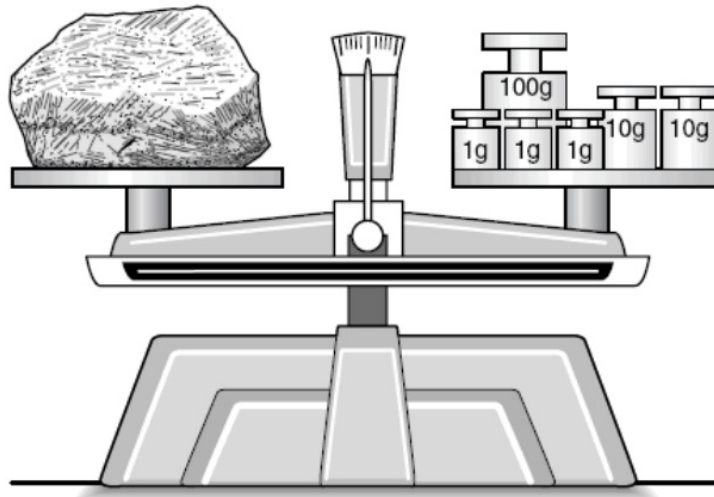
## MEASUREMENT REVIEW

What would be a reasonable measurement of the mass of a pencil?

- A. 10 centimeters
- B. 17 kilograms
- C. 17 millimeters
- D. 10 grams



# MEASUREMENT REVIEW



Which of these is the *most* accurate reading of the mass of the rock on the balance scale pictured?

- A 33 g
- B 120.3 g
- C 123 g
- D 303 g

## MEASUREMENT REVIEW

Rulers are used to measure distance and length. Length is how long something is. Scientists normally use the metric system to measure distance and length. The metric unit for distance and length is the meter.

Remember:

$100 \text{ cm} = 1 \text{ meter}$

$1000 \text{ mm} = 1 \text{ meter}$

$1000 \text{ m} = 1 \text{ kilometer}$

## MEASUREMENT REVIEW

If you wanted to measure the wingspan of a butterfly, what would be an appropriate unit of measure?

- A. meter
- B. centimeter
- C. millimeter
- D. kilometer

## MEASUREMENT REVIEW

An appropriate measure for the difference between the height of a dog and the height of a cloud would be:

- A. millimeter
- B. meter
- C. centimeter
- D. kilometer

## MEASUREMENT REVIEW

Thermometers are used to measure temperature.

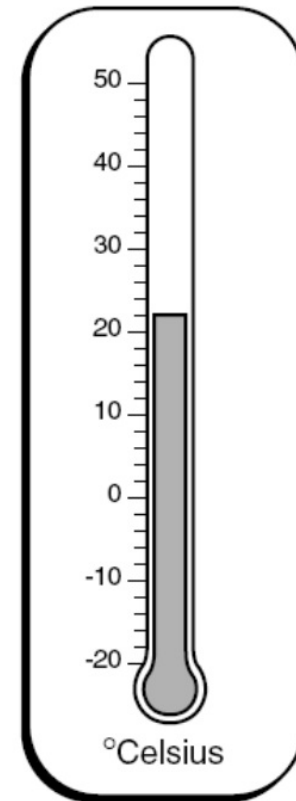
What is the temperature according to this thermometer?



# MEASUREMENT REVIEW

The picture shows a thermometer in a room. What is the temperature of this room?

- A 19°C
- B 20°C
- C 21°C
- D 22°C



# MEASUREMENT REVIEW

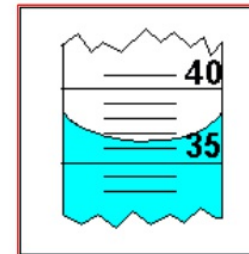
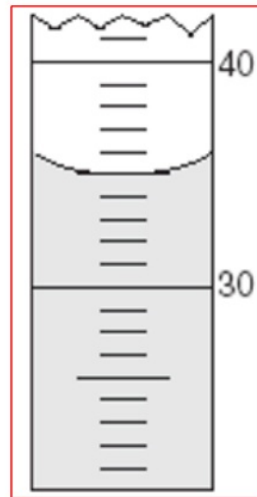
Graduated cylinders are used to measure the volume of a liquid. Volume is the amount of space an object takes up. The unit for liquid volume is the liter. It is measured using a graduated cylinder. Remember, when you read a graduated cylinder, you look at the bottom of the meniscus!

Click on the cylinder to see the answer.

What is the volume of liquid in these cylinders?



73 mL

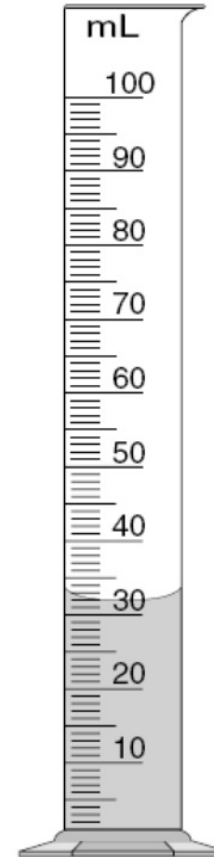


RESET

# MEASUREMENT REVIEW

**If 5 milliliters of vinegar are added to the water in the cylinder, what will be the total volume of the liquid?**

- A 30 milliliters
- B 27 milliliters
- C 37 milliliters
- D 35 milliliters



# MEASUREMENT REVIEW

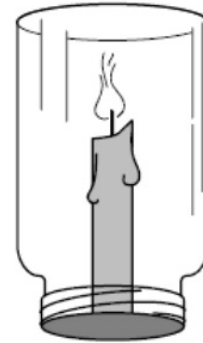
Data are facts that are gathered from scientific observations and experiments. When scientists record data from an experiment, they often display that data in a chart or graph. Graphs help us to see data in picture form. It makes it easier to interpret the data and to make predictions from the data.

Two common types of graphs are bar charts and line graphs. Bar charts allow us to compare data. Line graphs allow us to see data over a period of time.

# MEASUREMENT REVIEW

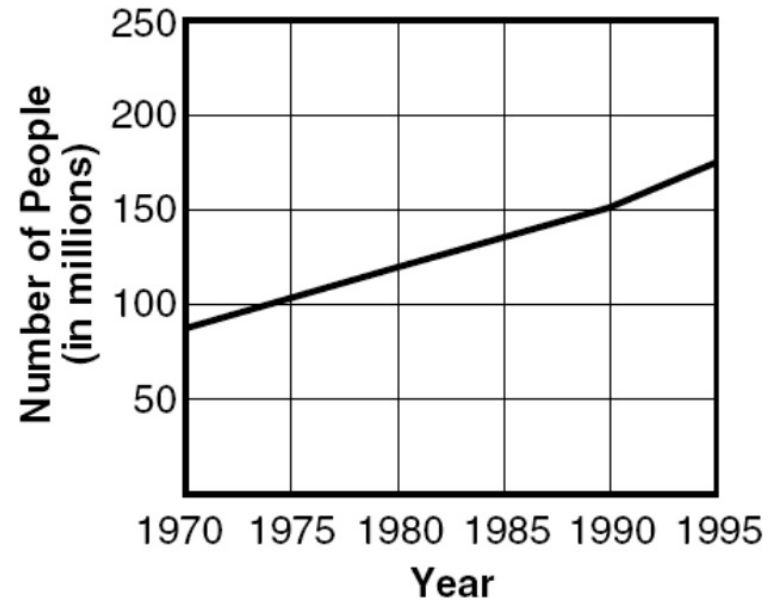
The graph shows what happened when a candle was burned in different jars. The results of this experiment show that the bigger the jar, the —

- A faster the candle melted
- B longer the candle burned
- C brighter the candle's flame
- D higher the candle's flame



# MEASUREMENT REVIEW

**Population of Brazil  
1970-1995**



**From the chart shown above, you can predict that for the year 2000, Brazil's population will —**

- A. show a heavy drop
- B. be a flat line even with 1995
- C. have topped 250 million
- D. continue its steady rise

## Images from:

<http://www.sks-bottle.com/340c/Scales12.jpg>

<http://www.playchild.com/catalog/images/SEL-scale.jpg>

[http://www1.istockphoto.com/file\\_thumbview\\_approve/210317/2/istockphoto\\_210317\\_old\\_outdoor\\_thermometer.jpg](http://www1.istockphoto.com/file_thumbview_approve/210317/2/istockphoto_210317_old_outdoor_thermometer.jpg)

<http://morrisonlabs.com/images/volumexamples/gradcylzoom73ml.gif>

<http://www.ccsdk12.org/~mflores/chemistry/50.gif>

<http://www.chem.tamu.edu/class/fyp/mathrev/pics/gradcyl.gif>

Questions and related pictures taken from Virginia Dept. of Education, SOL Released Items, 5th grade Science