

NAME Key DATE \_\_\_\_\_ P \_\_\_\_\_

Measurement STUDY GUIDE

DIRECTIONS: Answer the following in a complete sentence.

**LENGTH**

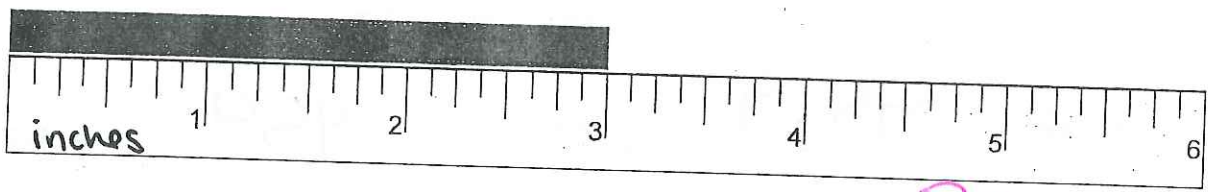
1. Convert 11.2 cm to millimeters.

11.2 cm is equal to 112 mm.

2. What instrument is commonly used to measure the length of an object?

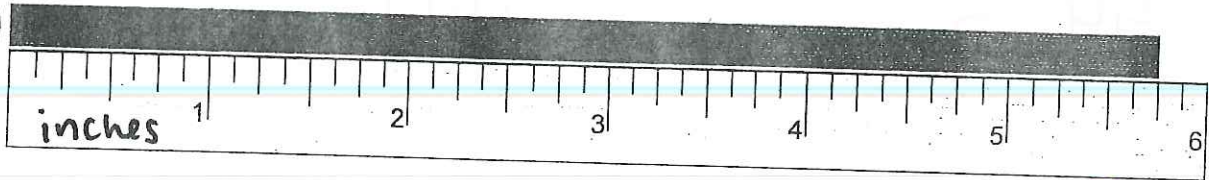
The object that is commonly used to measure length is the ruler.

3

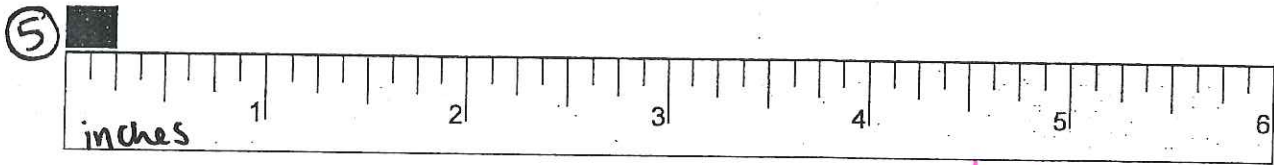


What is the length in inches? 3 in

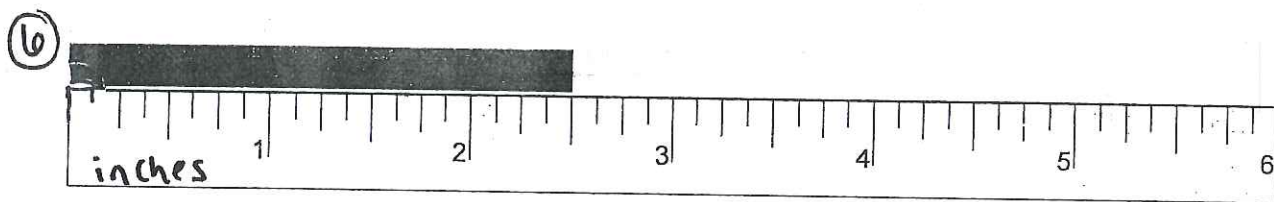
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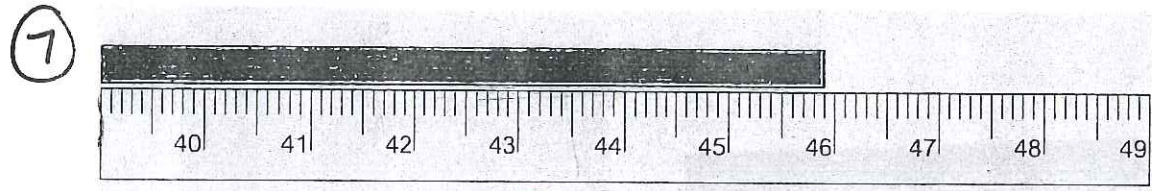
What is the length in inches? 5  $\frac{3}{4}$  in



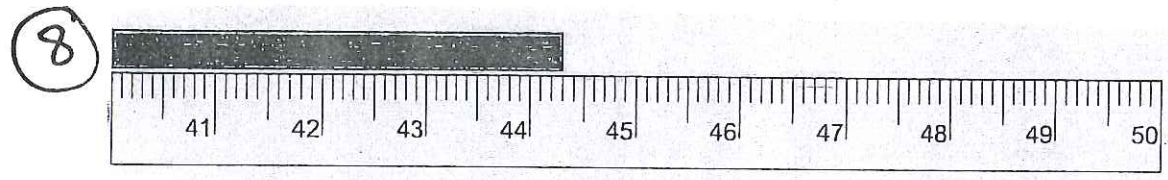
What is the length in inches? 1/4 in



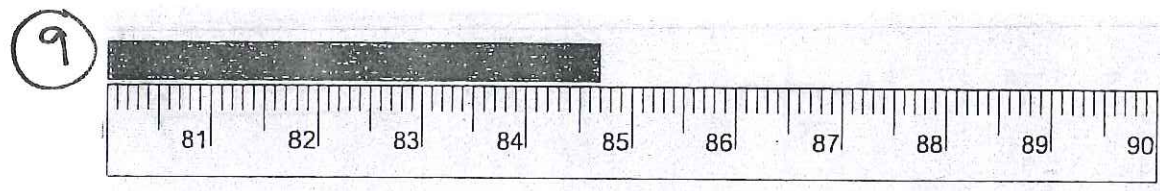
What is the length in inches? 2 1/2 in



Length 45.9 cm      459 mm



44.3 cm      443 mm



84.7 cm      847 mm

## VOLUME

10) What instrument is commonly used to measure the specific volume of an object?

A graduated cylinder is used to measure volume.

11) What term describes the amount of space that matter takes up?

Volume is the amount of space that matter takes up.

12) You are using a graduated cylinder in class. What would be an appropriate measure to write in your lab notebook?

a. 86.2 g

b. 86.2 cm

c. 86.2 mL - for a liquid volume

d. 86.2 cm<sup>3</sup> - for rectangular solids

13) What steps would you do to find the volume of an irregular solid?

① Read the volume of the water in the graduated cylinder (10 mL)

② Place the irregular solid in the graduated cylinder

③ Read the new volume of water + irregular solid (15 mL)

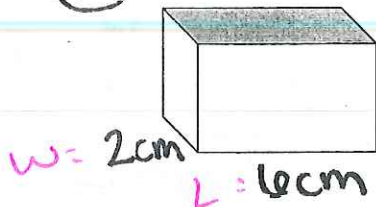
④ Find the difference to determine the volume of the irregular solid (15 mL - 10 mL = 5 mL)

⑤ The answer is the volume of the irregular solid (5 mL)  
This is water displacement.

14) When would it be necessary to use the water displacement method to find a volume of an object?

It would be necessary to use water displacement when you have an irregular solid.

15)



3cm = H

What is the volume of the rectangular solid? Show your work.

$$V = L \times W \times H$$

$$V = 6\text{cm} \times 2\text{cm} \times 3\text{cm}$$

$$V = 12\text{cm}^2 \times 3\text{cm}$$

$$V = \boxed{36\text{cm}^3}$$

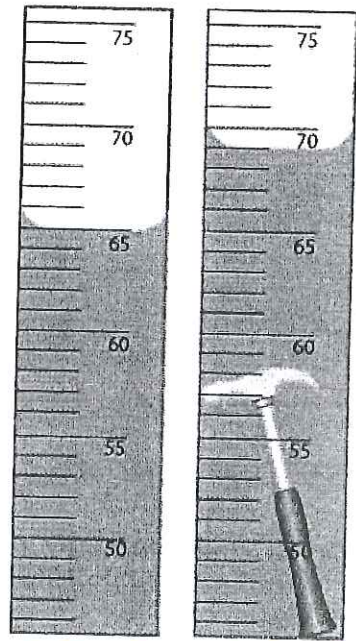
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What is the volume of the hammer?  
Show your work.

4 mL

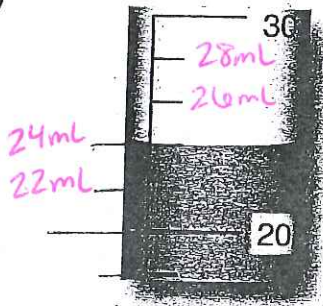


$$\begin{array}{r} 69\text{ mL} \\ - 65\text{ mL} \\ \hline 4\text{ mL} \end{array}$$



65 mL      69 mL

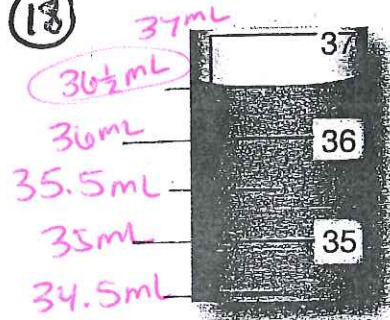
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What is the volume?

24 mL

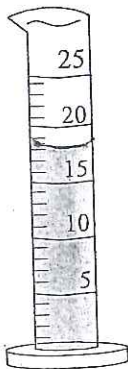
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What is the volume?

36 1/2 mL  
OR  
36.5 mL

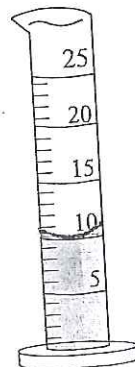
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What is the volume?

18 mL

20



What is the volume?

10 mL

MASS

21) What instrument is commonly used to measure the mass of an object?

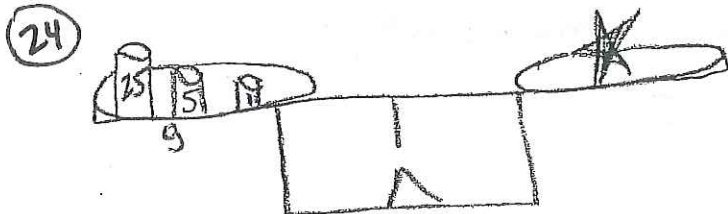
The Triple Beam balance and double platform balance are used to measure the mass of an object.

22) What is the measure of the amount of matter in an object?

Mass is the amount of matter in an object.

23) One gram is approximately equal to the mass of:

- a. a small paper clip
- b. a baseball bat
- c. a marble
- d. a person

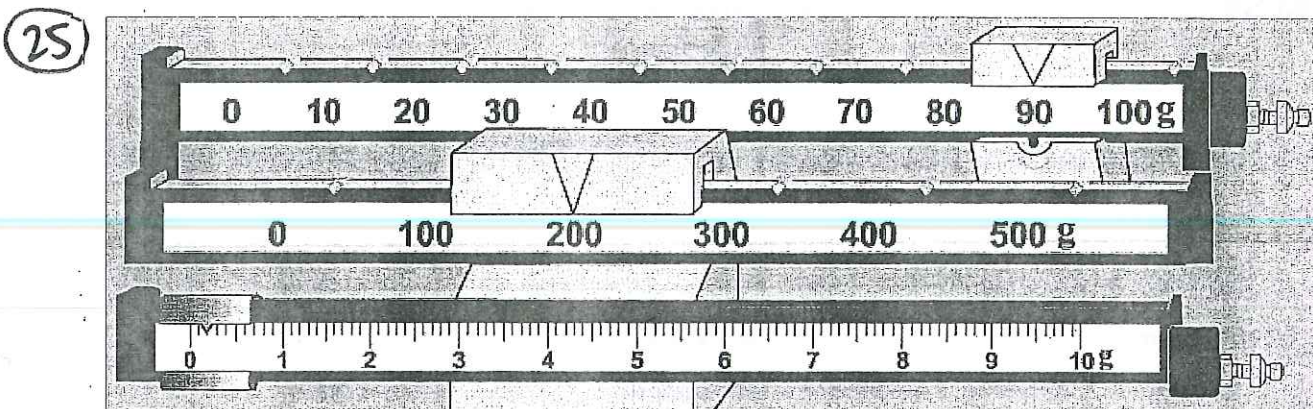


What is the mass?

31g

What is this instrument?

Double Platform Balance



$200.0g$   
 $90.0g$   
 $+ 0.2g$   
 $290.2g$

What is the mass? 290.2g

What is the name of this instrument?

Triple Beam Balance

- 26 Mass refers to the amount of matter in an object.
- 27 Matter is the "stuff" everything is made of.
- 28 Volume a measure of the size of a body or region in three-dimensional space.
- 29 Length is the longest dimension of an object or the distance traveled by an object.

DIRECTIONS: Write the correct base unit in the metric system.

- 30 Mass grams
- 31 Volume liters (or milliliters)
- 32 Length meters (cm, mm, inches) } we use in class

DIRECTIONS: True or False.

- 33 False A hypothesis is a random guess.
- 34 false Graduated cylinders come in only one size, 25mL.
- 35 Mass and weight are the same thing and are measured by the same units. } *Not on the test!*
- 36 true Mass can be determined with a double-platform balance.
- 37 false Scientists measure volume in ounces. = mL or cm<sup>3</sup>
- 38 false The meniscus forms because the water molecules are more attracted to each other than the glass container.
- 39 true The meniscus is located at the bottom of the curve.
- 40 false You can tell just by looking if one object has more mass than a second object.
- 41 false You cannot find the volume of an irregular shaped object.

DIRECTIONS: Match the correct label with the unit of measurement. Choices will be used more than once.

- 42 B 6 cm
  - 43 C 538 mL
  - 44 B 25.9 cm
  - 45 A 4.44 g
  - 46 B 1600 mm
  - 47 C 93 cm<sup>3</sup> - *regular solid volume V = L x W x H*
  - 48 B 8 cm
- A. Mass  
B. Length  
C. Volume