

Benchmark Test Review

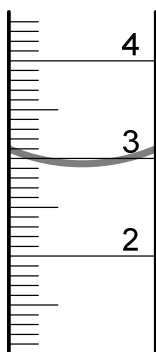
(for test on 11-30-07)

Lab Safety

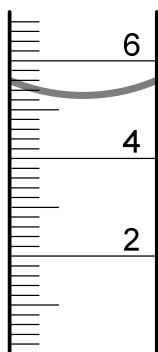
- What safety equipment should always be worn when working with chemicals? (p.669) _____
- How should odors be checked safely? (p.669) _____

Scientific Method

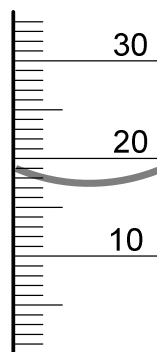
- For each of the following, state the volume in the graduated cylinder. Remember to measure from the bottom of the meniscus (the curved surface of the liquid) and to first determine how much each mark on the scale represents. (p.654)



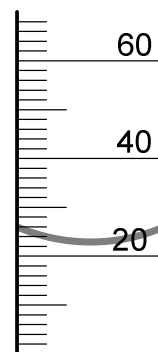
_____ mL



_____ mL

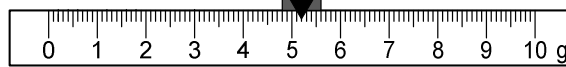
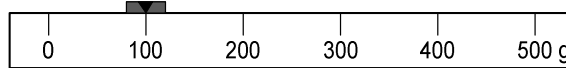
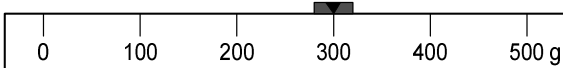
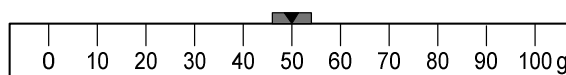
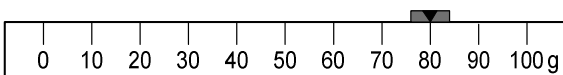


_____ mL



_____ mL

- For each of the following, state the mass indicated on the triple beam balance. (p.674)



_____ g

_____ g

- A scientific experiment should be designed so that all _____ except the one being tested are controlled. The _____ variable is the one that is controlled or changed by the scientist. The _____ variables are the ones measured by the scientist. (pp.12-13, 657)
- Whenever possible, eliminate all _____ sources of error, by using machines to take measurements or apply force in an accurate and repeatable way.

Metric System

- The metric units for liquid volume are _____ or _____. (p.654)

- The metric units for length are _____, _____ or _____ . (p.654)
- The metric units for mass are _____ or _____ . (p.655)
- The metric units for force are _____ . (p.125)
- The metric units for energy or work are _____ . (p.159)
- The metric units for temperature are degrees _____ . (p.655)
- The units shown on the scale of a graduated cylinder are _____ . (p.654)
- The units shown on the three scales of a triple beam balance are _____ . (p.674)

Atomic Structure

- The center of an atom is the _____ . (p.61)
- The outer part of an atom is the _____ . (p.61)
- The subatomic particle with a positive charge in the nucleus of an atom is a _____ . (p.61)
- The subatomic particle with a neutral (no) charge in the nucleus of an atom is a _____ . (p.61)
- The subatomic particle with a negative charge in the electron cloud of an atom is an _____ . (p.61)
- The number of protons or electrons is indicated by the _____ . (p.33)
- The sum of the protons and neutrons in an atom is indicated by the _____ . (p.32)
- To find the number of neutrons in an atom, subtract the _____ from the _____ . (notes)

Periodic Table

- The horizontal (left to right) rows on the periodic table are called _____, and indicate the number of _____. Properties such as the size of the atom and melting and boiling points vary regularly across each _____ of the periodic table. (p.33, 36)
- The vertical (up and down) columns on the periodic table are called _____ or _____, and indicate (for only the representative elements) the number of _____. (pp.33, 62)
- The elements touching the zig-zag line on the periodic table are usually _____. (pp.34-35, 54)
- The elements to the right of those elements touching the zig-zag line are _____. (pp.34-35, 48)
- The elements to the left of those elements touching the zig-zag line (except hydrogen) are _____. (pp.34-35, 39)
- Elements that conduct heat and electricity well, that are shiny, and that are malleable and ductile, are _____. (p.39)
- Elements that do not conduct heat and electricity well, that are not shiny, and that are brittle, are _____. (p.48)
- For each of the following elements, write the symbol and the atomic number (p.676-77)

Carbon	_____	Oxygen	_____
Hydrogen	_____	Potassium	_____
Sulfur	_____	Aluminum	_____
Chlorine	_____	Nitrogen	_____
Calcium	_____	Sodium	_____

Chemical Reactions

- The length, mass and temperature of an object are examples of _____ . (p.25)
- The ability of a substance to react with another substance like an acid, and the ability of a substance to burn, are examples of _____ . (p.25)
- Changing the size of an object by cutting it in two, and changing the state of a substance by freezing or melting it, are examples of _____ . (p.27)
- Burning a substance, and mixing two substances together to make a completely new substance with different properties (like reacting an acid with a base), are examples of _____ . (p.28)
- Evidence of a chemical _____ include the release the gas bubbles, the formation of a different colored substance, and the creation of heat (like when something burns). (p.29)
- A description of the kinds of elements in a substance, and the numbers of atoms for each element, using only the one or two letter symbols for the elements and subscript numbers for the quantity of atoms for each element, is a _____ . (p.26)
- A description of a chemical reaction, showing the chemical formulas of the _____ (substances before the reaction takes place) on the left, and the chemical formulas of the _____ (substances after the reaction takes place) on the right, is called a _____ . (p.28)

Energy

- The process in which the _____ in plant leaves converts electromagnetic energy from the Sun (sunlight) into chemical energy, using _____ and _____ as reactants, and creating _____ and _____ as products, is called _____. (pp.205-208)
- A stretched rubber band or compressed spring has _____ energy. (p.193)
- Water at the top of a waterfall, or an object at the top of a cliff, has _____ energy. (p.200-201)
- Water falling over a waterfall, or an object falling off a cliff, has _____ energy. (p.200-201)
- Gravitational potential energy will be highest at the _____ of a waterfall. (p.200)
- Kinetic energy will be highest in a falling object just before the object hits the _____. (p.200)
- The form of energy contained in coal or petroleum is _____. (p.194)
- The form of energy contained in uranium that is used in a fission reaction is _____. (p.195)
- The form of energy given off by a fire is _____. (p.194)
- The form of energy found in sunlight is _____. (p.195)
- The form of energy found in house wiring is _____. (p.195)
- The form of energy that is found in moving objects is _____. (p.194)
- Energy resources such as petroleum, natural gas and coal are _____. (p.623)
- Energy resources such as sunlight, wind and geothermal are _____. (p.623)
- Energy resources such as biomass (wood, alcohol, oil seed crops) are _____. (p.623)
- Living organisms have an internal _____ to an outside _____, energy and forces like sunlight and gravity. For example, the leaves and stems of plants grow towards sunlight, while the roots of plants grow towards the source of gravity. (p.341)