تجميعة أسئلة القسم الالكتروني وفق الهيكل الوزاري منهج انسباير

موقع المناهج ⇦ المناهج الإماراتية ⇦ الصف التاسع العام ⇦ علوم ⇦ الفصل الأول ⇦ اختبارات الكترونية ⇦ الملف
تاريخ إضافة الملف على موقع المناهج: 2024-11-10 12:33:07

المزيد من مادة علوم:	ملفات ا كتب للمعلم ا كتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي ا للمدرس

التواصل الاجتماعي بحسب الصف التاسع العام

صفحة المناهج الإماراتية على فيسبوك				

المواد على تلغرام	التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات

المزيد من الملفات بحسب الصف التاسع العام والمادة علوم في الفصل الأول

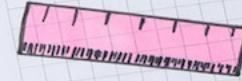|	
تجميعة صفحات الكتاب وفق الهيكل الوزاري منهج بريدج	1
ملخص بدون أمثلة وفق الهيكل الوزاري منهج انسباير	2
الهيكل الوزاري الجديد المسار العام منهج بريدج	3
أسئلة مراجعة نهائية منهج انسباير	4
عرض بوربوينت درس قصة مادتين كيميائيتين	5

Final Exam revision MCQ Part 9 GEN

6	Differentiate between constant, control, dependent & independent variables and assign them in a given example (scenario)	textbook, table 1, figure 13	**Page number 7, 8, 19**

Table 1 Types of Variables

Dependent Variable	changes according to the changes of the independent variable
Independent Variable	the variable that is changed to test the effect on the dependent variable
Constant	a factor that does not change when other variables change
Control	the standard by which the test results can be compared

Distance from Home

The dependent variable in this graph is distance.
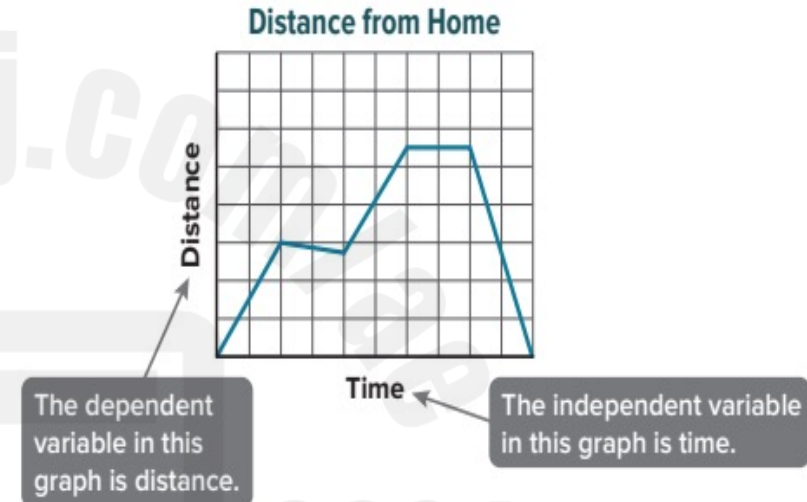
The independent variable in this graph is time.

Figure 13 This graph tells the story of the motion that takes place when a girl takes her dog for a 10-minute walk. The dependent variable is on the y-axis, and the independent variable is on the x-axis.

1. Independent variable – Changing variable – X axis- (time)

2. Dependent variable- Measuring variable- Y axis -Distance

3. Constant variable- Remains same

A girl takes her dog for a 10- minute walk, as shown in the following graph, what does the distance on the y-axis represents?

Distance from Home

Distance

Time

a. The dependent variable

b. The independent variable

c. The control

d. The constant

Answer :a

To determine the boiling point of an unknown liquid, a student heats 10 mL of the liquid in a test tube and records the temperature every minute for 25 minutes. He plots the relation in the following graph.

What does the time on the x-axis represents?

Measuring boiling point for unkown liquid

Temperature (OC)

Time (min)

a. The dependent variable

b. The independent variable

c. The control

d. The constant

Answer :b

6. The factor that remains unchanged throughout the experiment is called.......................

A. Independent variable   b. Dependent variable   c. Constant

26. Which variable in an experiment is specifically changed by the scientist?

A. independent   B. dependent   C. constant   D. none

10. To determine the boiling point of an unknown liquid, a student heats 10 mL of the liquid in a test tube and records the temperature every minute for 20 minutes. In this example, time is the ___ variable.
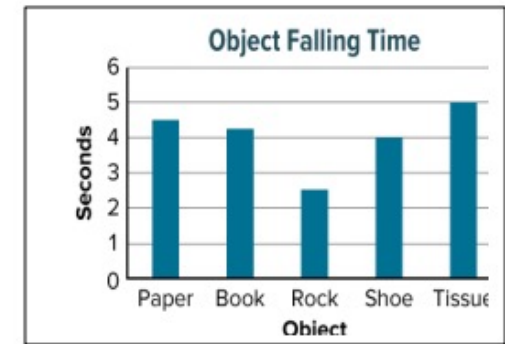
A. independent   B. dependent   C. constant   D. none

23. Students drop different objects from the same height and measure the time it takes each object to reach the ground. What is the dependent variable?

A. falling time

B. drop height

C. Paper

D. Shoe

Object Falling Time

7	**Define peer review, bias & blind experiment, to evaluate the effect on the quality of them on problem solving & scientific method**	textbook, figure 6	**Page number** 8.9

Figure 6 In order for medicine to be approved for use on humans, scientists have to run multiple trials to prove the results are objective.

27. What occurs when the expectations of a scientist change how the results of an experiment are viewed?

A. Conclusion   B. Bias   C. Data   D. None

Researchers conduct the scientific investigations in a blind experiment procedure, why?

Answer :d

a. To increase the safety procedures for the investigator or the subject

b. To increase the bias toward a specific item being tested

c. To reduce the consumption of study samples

d. To reduce the bias toward a specific item being tested

15. Which of the following features should NOT be included in the scientific process?

A. Hypothesis   B. Observation   C. Experimental bias   D. conclusion

19. A testable statement about the relationship between two or more variables is called

A. Hypothesis   B. Experiment   C. conclusion   D. Observation

20. Sometimes scientists misinterpret their data, causing them to draw the wrong conclusions. What is one common cause of scientific misinterpretation?

A. unit conversion

B. modeling

C. researcher bias

D. phenomenon

25. A(n) ___ is something that represents an idea or object to help people better understand it.

A. Observation   b. model   C. method   D. Theory

8	**Identify the SI base unit for different quantities (Time, length, mass, temperature, amount of a substance and electric current), and convert between these units using the prefixes**	textbook, tables 2 & 3	**Page number** 13, 14

Table 2 SI Base Units

Quantity Measured	Unit	Symbol
Length	meter	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Temperature	kelvin	K
Amount of substance	mole	mol
Intensity of light	candela	cd

Table 3 Common SI Prefixes

Prefix	Symbol	Multiplying Factor
Kilo-	k	1,000
Deci-	d	0.1
Centi-	c	0.01
Milli-	m	0.001
Micro-	µ	0.000 001
Nano-	n	0.000 000 001

Which of the following is measured in kilograms?

- ○ speed
- ○ mass
- ○ temperature
- ○ length

Answer :B

Which of the following is NOT a derived unit?

- ○ m
- ○ dm^3
- ○ cm^3
- ○ g/mL

Answer :A

All of the following quantities have derived units in the SI system EXCEPT ___.

- ○ pressure
- ○ volume
- ○ mass
- ○ density

Answer :C

7. Which of the following is equivalent to 4.5 m?

A.450cm   B.450 Km   C.4.5 Km   D. 450mm

18. All of the following quantities have derived units in the SI system EXCEPT ……………

A. Volume   B. Pressure   C. Mass   D. density

2. The SI unit of temperature is ……………

A. Mole   B. Candela   C. Kilogram   D. Kelvin

Which one of the following is **NOT** considered a base unit in the in the SI system?

a. Intensity of light (cd)

b. Electric current (A)

c. Temperature (K)

d. Volume (cm^3)

Final Exam revision

9	State the features of water on the Celsius, Fahrenheit, and Kelvin temperature scales, and compare between them	textbook, figure 12	**Page number** 18

Comparing Temperature Scales
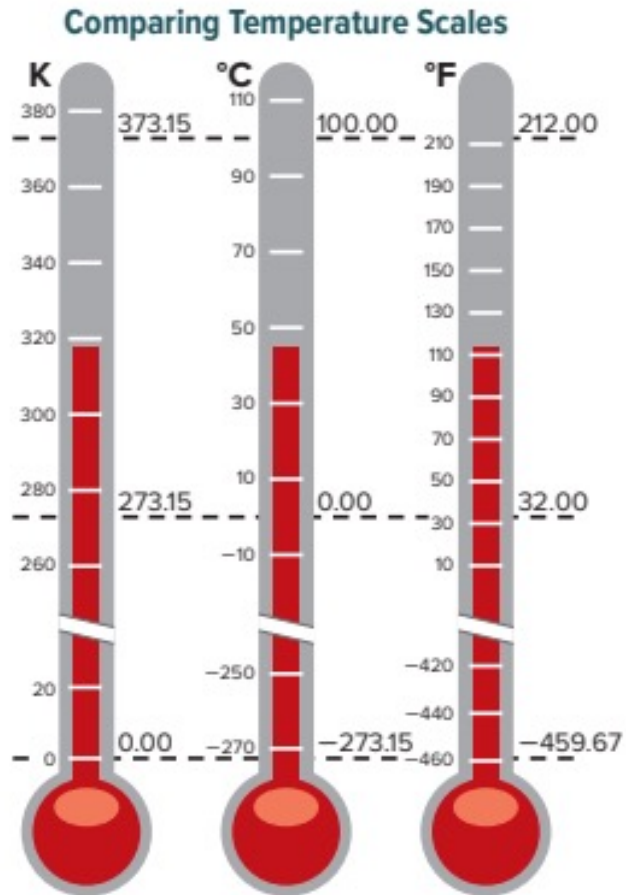
Figure 12 These three thermometers illustrate the three most common temperature scales. The dotted lines show absolute zero, the freezing point of water, and the boiling point of water.

State *the boiling point of water on the three scales.*

Convert between kelvin and degrees Celsius

$$K = {}^{\circ}C + 273$$

Celsius to kelvin
Add 273
Kelvin to Celsius
Subtract 273

Convert between Fahrenheit and degrees Celsius

$${}^{\circ}F = 1.8({}^{\circ}C) + 32$$

33. Convert 30^{0}C to Fahrenheit scale.

A. 86^{0}F   B. 303^{0}F   C. 243^{0}F   D.273^{0}F

34. convert 500k to degree Celsius

A. 773^{0}C   B. 227^{0}C   C. 270 ^{0}C   D. 0^{0}C

35. Convert 95 ^{0}F to Celsius.

A.35^{0}C   B. 27^{0}C   C. 45^{0}C   D. 273^{0}C

21. Convert 27ºC to Kelvin.

A.300K   B.27K   C.273K   D.246K

10	**Analyze and interpret data from given graphs (line & bar graphs)**	textbook, figures 15, 16	**Page number** 21, 22

Experimental Data
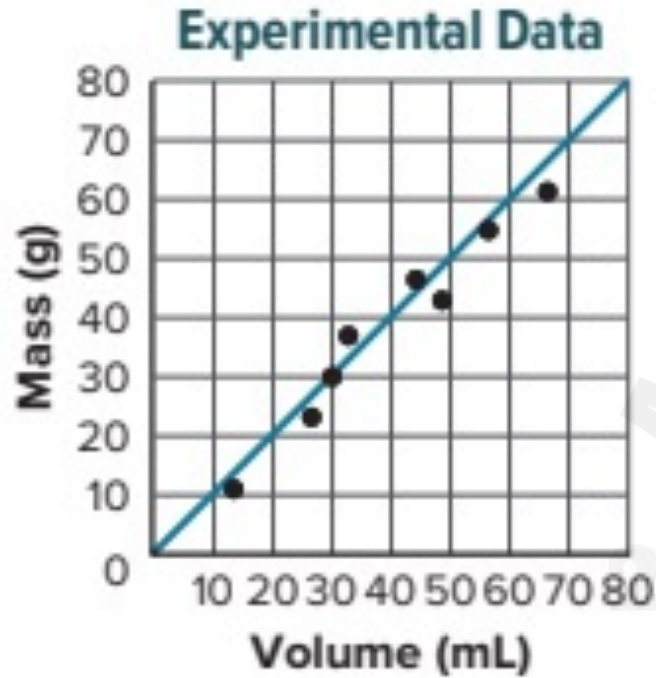
Figure 15 Generally, the line or curve that you draw will not intersect all of your data points.
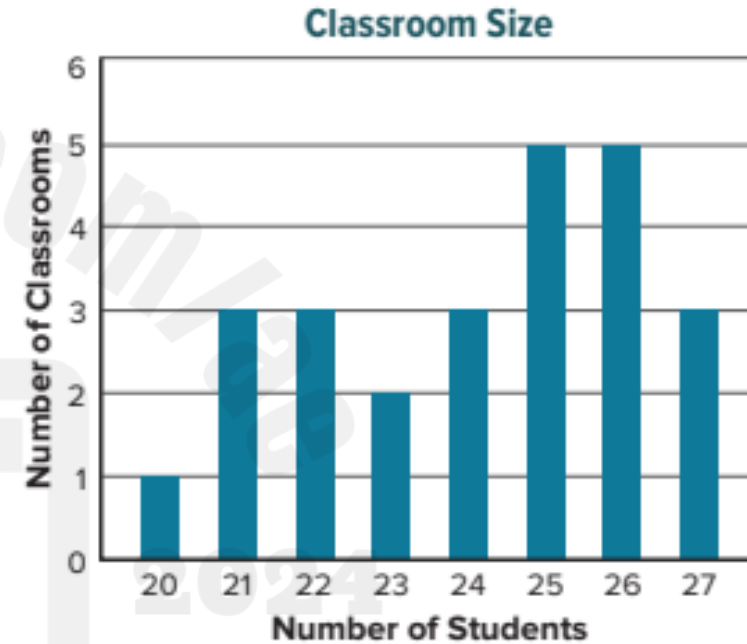
Classroom Size

Figure 16 The height of each bar corresponds to the number of classrooms having a particular number of students.

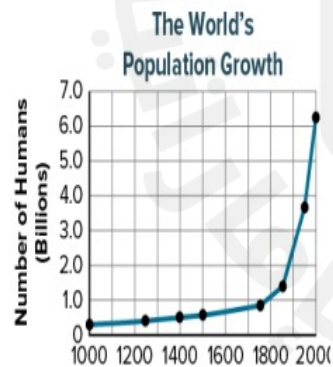1. **Which of the following is the best application of a line graph?**
A. to show how some fixed quantity is broken down into parts
B. to compare information collected by counting
C. to make observations and gather information
D. to show trends and how the data changes over time

14. Identify the kind of graph that would best show the results of a survey of 144 people where 75 ride a bus, 45 drive cars, 15 carpool, and 9 walk to work.

A. line graph   B. Bar graph   C. Circle graph   D. table

16. The best conclusion to draw from these data is that the population of the world is ....

A. staying about the same

B. decreasing

C. growing at a constant rate

D. increasing exponentially

The World's Population Growth

11. Which of the following is the best application of a line graph?

A. to show trends and how the data changes over time

B. to compare information collected by counting

C. to show how some fixed quantity is broken down into parts

D. to make observations and gather information

12. Based on the information in the graph, which statement is true?

A. Water will float on top of oil.

B. Corn syrup has the highest density of the three

C. Corn syrup and orange juice are very similar.

D. Corn syrup will dissolve in water.
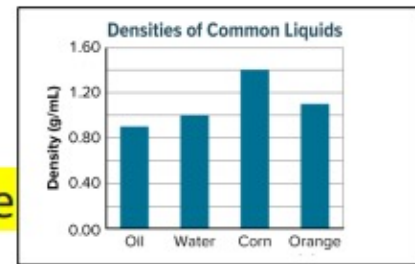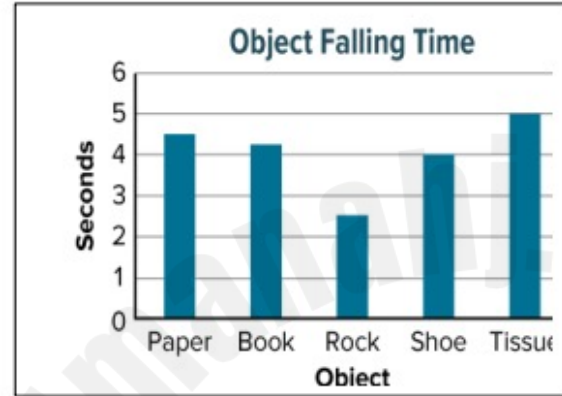
Densities of Common Liquids

23. Students drop different objects from the same height and measure the time it takes each object to reach the ground.
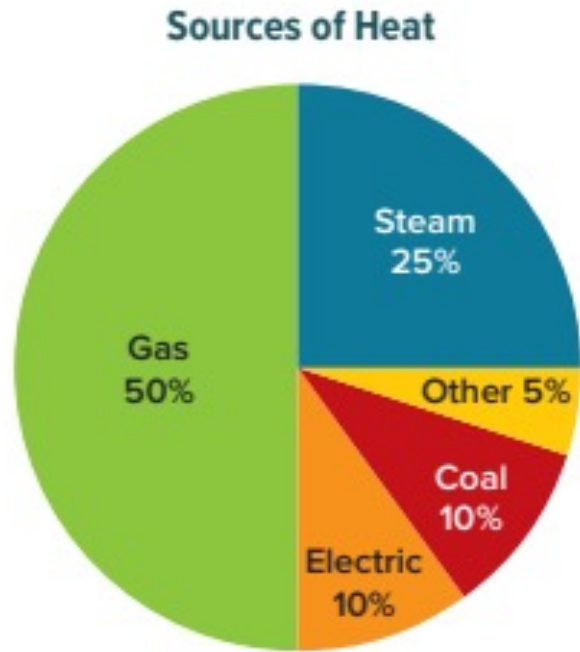What is the dependent variable?

A. falling time

B. drop height

C. Paper

D. Shoe

Object Falling Time

| 11 | **Analyze and interpret data from given circle graph** | textbook, figures 17 | **Page number** 23 |

Sources of Heat

Gas 50%
Steam 25%
Other 5%
Coal 10%
Electric 10%

Figure 17 A circle graph shows the different parts of a whole quantity.

A student made a circle graph showing the percentages of the substances that make up human blood. What is the ratio between plasma and cells (red blood cells, white blood cells and platelets)?

Substances Making Up Human Blood

Plasma 55%
Red blood cells 43%
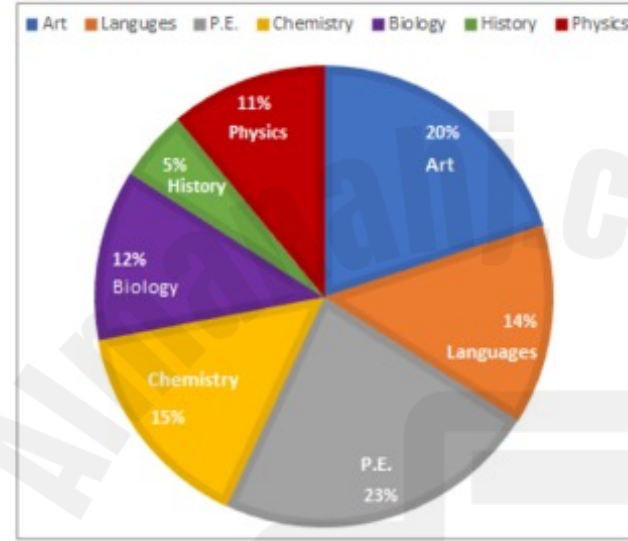White blood cells and platelets 2%
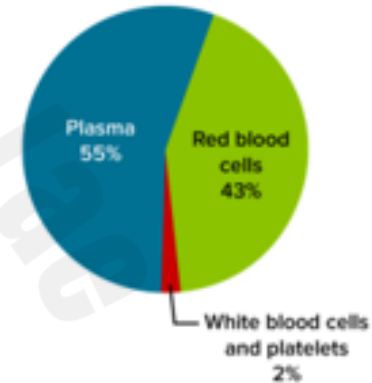
Answer :a

a. 55 : 45

b. 55 : 43

c. 55 : 2

The pie chart below shows the percentage of students according to their favorite school subject, what is the percentage of students who like to study science subjects (chemistry, biology, and physics) all together?

Answer :b

a.
20%

b.
38%

c.
23%

d.
43%

13. Mariam has decided to start an aquarium. At the pet store, she learns that every aquarium should be comprised of a certain percentage of different things, such as water, rocks, plants, and filters. Which of these would be the best way to illustrate the information about what aquariums should contain?

A. line graph   B. Bar graph   C. Circle graph   D. table

12	**List the assumptions of kinetic molecular theory as explanation of how the particles in gases behave**	textbook	**Page number** 354

Gas state

To understand the states of matter, we must think about the particles that make up matter. Consider the air around you: it is composed of nitrogen, oxygen, and water, along with other gases. These atoms and molecules—the particles that make up the air—are constantly moving. The **kinetic theory**, also known as kinetic molecular theory, is an explanation of how the particles in gases behave. To explain the behavior of particles, it is necessary to make the following assumptions:

1. All matter is composed of tiny particles (atoms, molecules, and ions).
2. These particles are in constant, random motion.
3. The particles collide with each other and with the walls of any container in which they are held.
4. The amount of energy that the particles lose from these collisions is negligible.

Figure 1 Water is a substance that can exist in all three common states of matter at the same time.

Identify *the solid and liquid states of water in this photo.*

Figure 2, on the next page, illustrates the kinetic theory. Because the particles of a substance in the gas state are in constant motion, colliding with each other and with the walls of their container, gases do not have a fixed volume or shape. The particles that make up a gas spread out so that they fill whatever container they are in.

Solids	Liquids	Gases
Definite shape Definite volume	No definite shape Definite volume	No definite shape No definite volume
Movement- Particles vibrate	Movement – Particles slide past each other	Movement- Particles move freely
Closely packed	Particles are closer	Particles are far apart
Have low kinetic energy	KE is more than solids and less than gases	Have more kinetic energy

1. Which of the following best describes particles in a solid?

A. Particles tightly packed together.

B. No attractive forces between particles.

C. Molecules slide past each other; sample take shape of container.

D. Fills whatever container it is in.

13	**Differentiate between states of matter and describe the thermal energy associated with changing between these states**	textbook, figure 4	**Page number** 356, 357

Figure 4 When ice is placed in water, energy from the particles of the liquid water is transferred to the particles of solid ice, melting the ice and cooling the water.
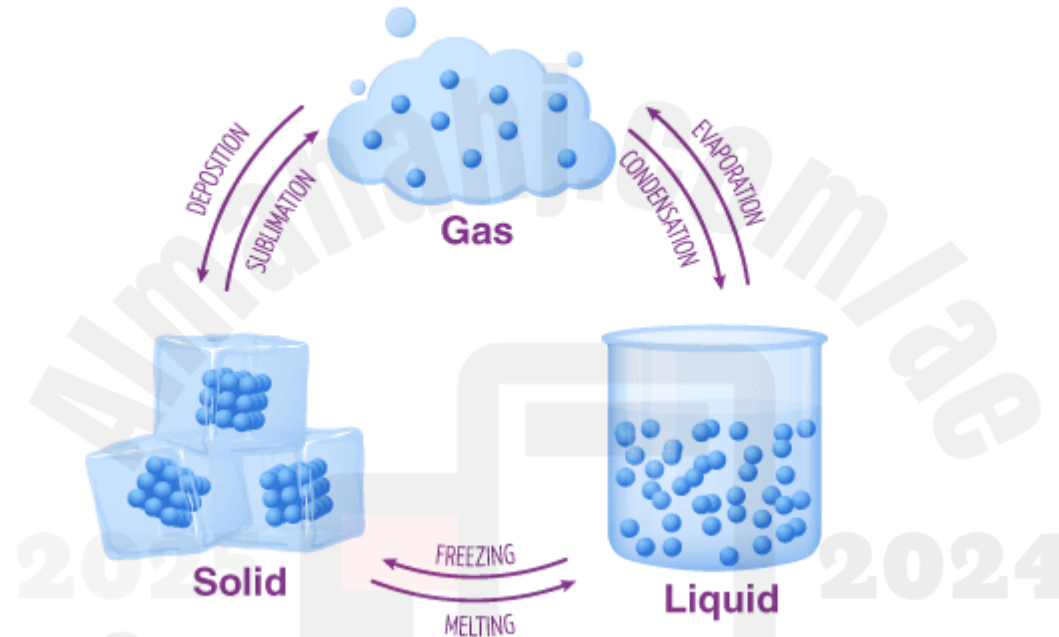
1. The energy required to change a liquid at its boiling point to a gas is ___.
   A. boiling point
   B. heat of sublimation
   C. heat of vaporization
   D. heat of fusion

9. What is the amount of energy needed to change a solid to a liquid at its melting point?

A) heat of fusion

B) temperature

C) heat of vaporization

D) absolute zero

Answer : a

6. In which state of matter do particles stay close together, yet can slide past each other?

A. solid   C. gas

B. liquid   D. plasma

Answer : b

5. Which describes the energy required for a liquid at its boiling point to become a gas?

A. heat of vaporization

B. diffusion

C. heat of fusion

D. thermal energy

Answer : a

Water's strange behavior

Ordinarily, substances contract as their temperatures decrease. However, an exception to this rule is water. Over a small range of temperatures, water expands as the temperature decreases. At first, it behaves like other substances. As the temperature begins to drop, the particles that make up water move closer together. This continues until the water reaches 4°C.

Water molecules are unusual in that they have highly positive and highly negative areas. These charged regions affect the behavior of water. As the temperature of water continues to drop under 4°C, the molecules line up so that only positive and negative areas are near each other, as shown in **Figure 10**. As a result, empty spaces occur in the structure. Water expands as it cools from about 4°C to 0°C and becomes less dense than liquid water. That is why ice floats in liquid water.
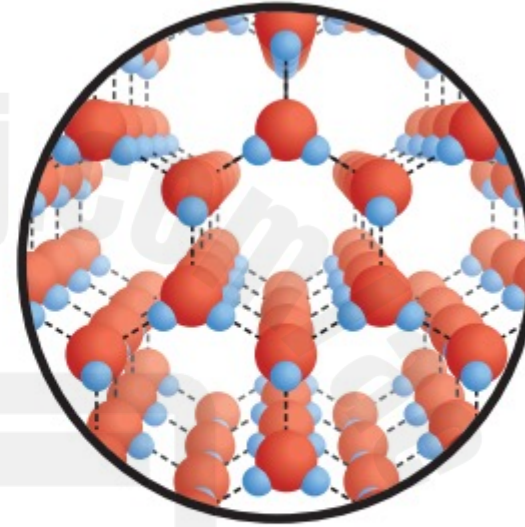
Figure 10 When water freezes, the positively and negatively charged ends of the water molecules interact, creating empty spaces in the crystal lattice.

Explain why ice floats in water.

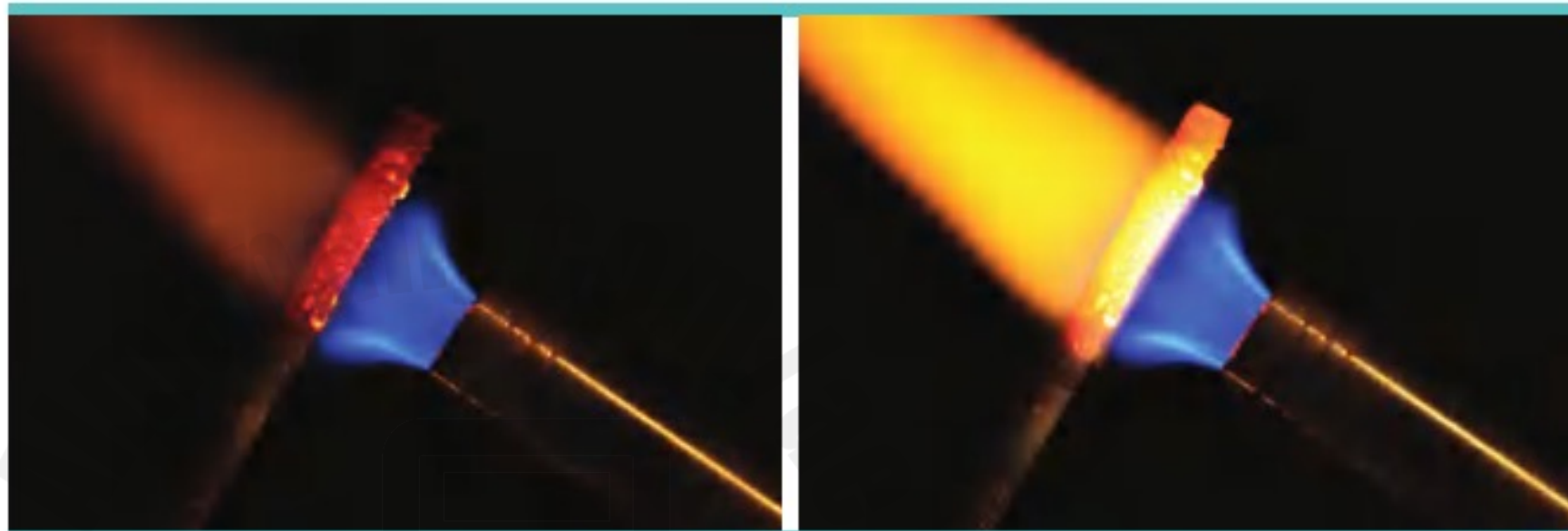| 15 | **Differentiate between physical and chemical properties and list examples on them** | Textbook, figures 13, 14,17 | **Page number** 386, 387, 389 |

Size is the property used to separate sesame seeds from sunflower seeds.

Magnetism easily separates iron from sand.

Figure 13 The best way to separate mixtures depends on their physical properties.

Figure 14 Heating iron raises its temperature and changes its color. These changes are physical changes because it is still iron.
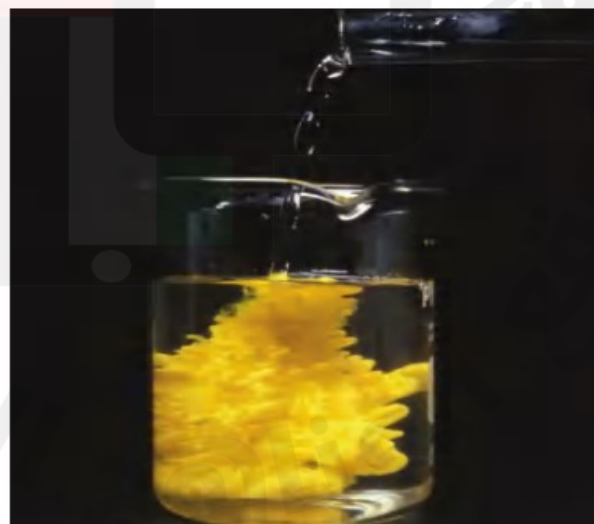
Figure 17 When clear solutions of lead(II) nitrate and potassium iodide mix, a reaction takes place and a yellow solid, lead(II) iodide, appears. The yellow solid that is produced in the chemical reaction is called a precipitate.

Physical Properties

Observed and measured without changing chemical identity of sample

Color

Length

Volume

Opacity

Chemical Properties

Observed and measured as sample changes chemical identity

Acidity

Reactivity

Flammability

Toxicity

Which of the following is a chemical property?   ، مما يأتي تُعتبر خاصية كيميائية؟

Learning Outcomes Covered

○ SCI.4.4.01.083

Answer : C

a.

Iron is denser than Aluminum   الحديد أكثر كثافة من الألمنيوم

b.

Boiling point of Ammonia = $(-33.34°C)$ درجة غليان الأمونيا = $(-33.34°C)$

c.

Sodium ignites when dropped in water   الصوديوم يشتعل عند وضعه في الماء

d.

Two layers form when mixing oil with water   تتكون طبقتان عند مزج الزيت مع الماء

Final Exam revision

16	**State the law of conservation of mass and calculate the masses of the products and reactants of simple chemical reactions**	textbook, fig.19, example problem 1, practice problem 7	**Page number** 391, 392

Figure 19 The reaction between sodium bicarbonate and hydrochloric acid produces carbon dioxide gas, which is collected in the balloon.

Describe *How can you tell that matter was not created or destroyed in this reaction?*

Total mass of reactants = Total mass of products

PRACTICE Problems

7. When methane reacts with oxygen, the products are carbon dioxide and water. How many grams of water are formed if 24 g of methane react completely with 96 g of oxygen to form 66 g of carbon dioxide?

Methane + Oxygen = Carbon dioxide + water

24g + 96g = 66g + water

120g = 66g +water

Water = 120-66 = 54 g

Law of conservation of mass

In the complete reaction between 45.98 g of sodium with 70.90 g of chlorine, what mass of sodium chloride is formed?

45.98 من الصوديوم مع 70.90 g يد الصوديوم المتكونة؟

$$2Na(s) + Cl_2(g) \rightarrow 2NaCl(s)$$
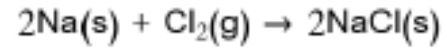
Learning Outcomes Covered

- SCI.4.4.01.087
- SCI.4.4.01.091

a. 116.88 g

b. 178.78 g

c. 24.92 g

d. 60.44 g

Answer : a

Law of conservation of mass

After two elements react to completion in a closed container,

the summation of their masses in the container after the reaction

will be the same as before the reaction. Which law describes this principle?

لاكتمال في حاوية مغلقة،

ين في الحاوية بعد التفاعل

، قانون يصف هذا المبدأ؟

Learning Outcomes Covered

- SCI.4.4.01.087
- SCI.4.4.01.091

Answer : c

a.

Law of definite proportions

قانون النسب الثابتة

b.

Law of multiple proportions

قانون النسب المتضاعفة

c.

Law of conservation of mass

قانون حفظ الكتلة

d.

Law of conservation of energy

قانون حفظ الطاقة
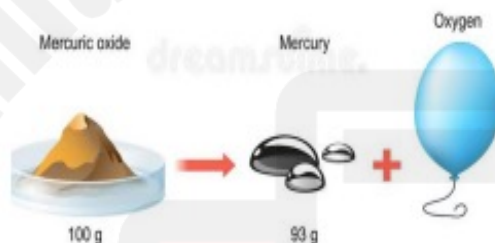
27. Which law is explained in the picture?

  A. Law of conservation of Energy

  B. Law of conservation of mass

  C. Pascal's law

  D. Gravitational law

Reactants Mass → Products Mass

28. Observe the picture and find the mass of Oxygen.

  A. 100 g

  B. 193 g

  C. 7g

  D. 93

Mercuric oxide → Mercury + Oxygen
100 g → 93 g

29. Nitrogen react with Hydrogen to form Ammonia. According to law

  Of conservation of mass ……………………………

  A. Mass of nitrogen and Hydrogen equals to mass of ammonia

  B. Mass of nitrogen and Hydrogen greater than mass of ammonia

  C. Mass of nitrogen and Hydrogen less than mass of ammonia

  D. All of these.

31. 16g methane react with 64 g of oxygen to produce carbon dixide and 36 g of water vapour. The mass of carbon dioxide produced in the reaction is ………………

  A. 44 g   B.80g   C.48 g   D.64 g

6. Iron and oxygen react to form rust. If 223 g of iron react with 96 g of oxygen, what is the mass of rust formed?

  A. 300 g   B. 96g   C.223g   D.319

17	**Use the relationship between the atomic number, and the mass number to find number of protons, electrons, and neutrons for a given element from the periodic table**	Textbook, table 4	**Page number** 405

Table 4 **Mass Numbers of Atoms**

Element	Symbol	Atomic Number	Protons	Neutrons	Mass Number
Boron	B	5	5	6	11
Carbon	C	6	6	6	12
Oxygen	O	8	8	8	16
Sodium	Na	11	11	12	23
Copper	Cu	29	29	34	63

A krypton atom consists of 36 protons, 36 electrons, and 48 neutrons.

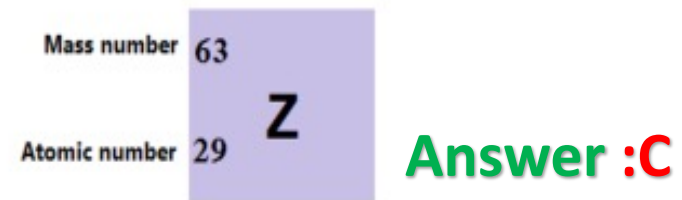The mass number of krypton is _____ .

Which of the following is correct for the element X, shown in the figure below?

Mass number **91**

X

Atomic number **40**

Answer :D

	Electrons number	protons number	neutrons number
A.	51	40	91
B.	40	51	91
C.	40	51	51
D.	40	40	51

Which of the following is correct for the element Z, shown in the figure below?

Mass number **63**

Z

Atomic number **29**

Answer :C

	Electrons number	protons number	neutrons number
A.	63	29	63
B.	29	34	63
C.	29	29	34
D.	29	63	34

Isotope's Name	Number of Protons	Number of Electrons	Mass Number	Number of Neutrons
Uranium- 234	92			
Lithium-8		3		

Which of the following is correct for the element $_{27}^{59}X$?　　صحيح فيما يتعلق بالعنصر $_{27}^{59}X$ ؟

	Electrons no عدد الإلكترونات	protons no عدد البروتونات	neutrons no عدد النيوترونات
1.	59	27	59
2.	32	32	32
3.	27	27	59
4.	27	27	32

Answer : d

a.　1

b.　2

c.　3

d.　4

Element's Name	Number of Protons	Number of Electrons	Number of Neutrons	Mass Number
Potassium	19			39
Phosphorus	15		16	

18	**Explain how the isotopes of an element are alike and how they are different**	textbook, figure 7	**Page number** 406, 407
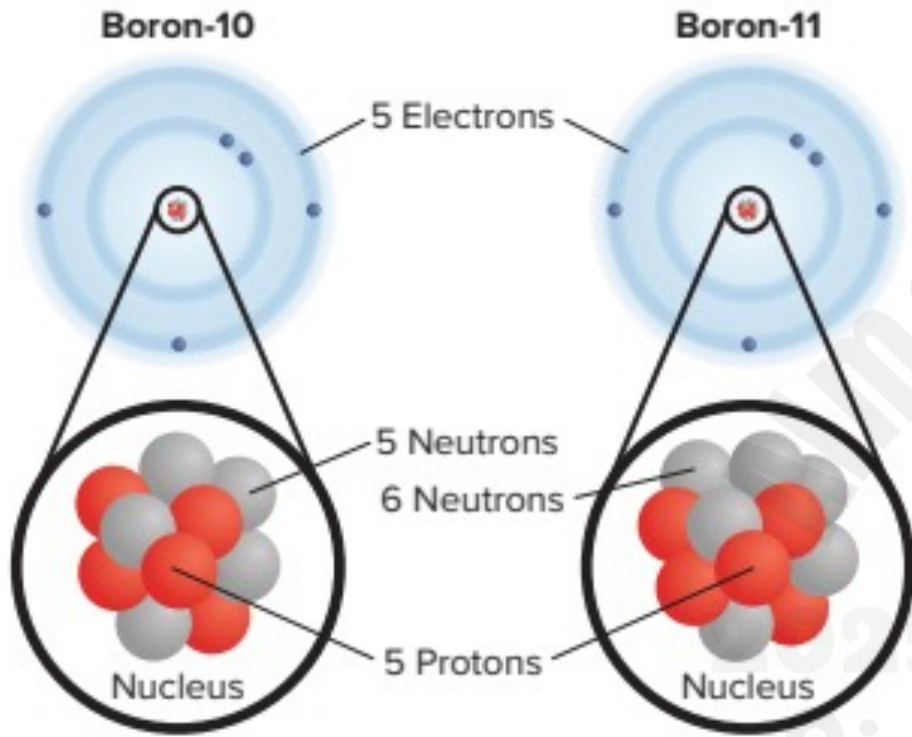
Figure 7 Boron-10 and boron-11 are two isotopes of boron. These two isotopes differ by one neutron. Most naturally occurring elements have more than one naturally occurring isotope.

Explain *why these atoms are isotopes.*

Isotopes are atoms of the same element that have the same _____ but different _____ .

| 19 | **Calculate the average atomic mass of an element** | textbook | **Page number** , 407 |

Bromine has two isotopes:

one isotope has an atomic mass of 78.92 amu and a relative abundance of 50.69%.

The other major isotope of bromine has an atomic mass of 80.92 amu and a relative abundance of 49.31%

What is the average atomic mass of bromine?

Answer :79.91 amu

Copper has two isotopes:

Cu–63 (abundance = 69.2%,mass = 62.930 amu) and Cu–65 (abundance =30.8%, mass = 64.928 amu).

What is the average atomic mass of copper?

Answer :63.545 amu

- The average atomic mass of an element is the weighted average mass of all naturally occurring isotopes of that element.

Potassium has three naturally occurring isotopes: potassium-39, potassium-40, and potassium-41.

Isotope	Potassium-39	Potassium-40	Potassium-41
Isotope Mass (amu)	38.96	39.96	40.96
Relative Abundance (%)	93.3	0.01	6.69

The average atomic mass of potassium isotopes is _____ amu.

20	**Define row and group in periodic table of elements, explain common physical and chemical properties of elements within a group and/or a row, link the location of the element to the number of valency electrons and atomic number in order to explain why elements in the same group have similar properties**	textbook, fig. 11 & 13	**Page number** 412, 414
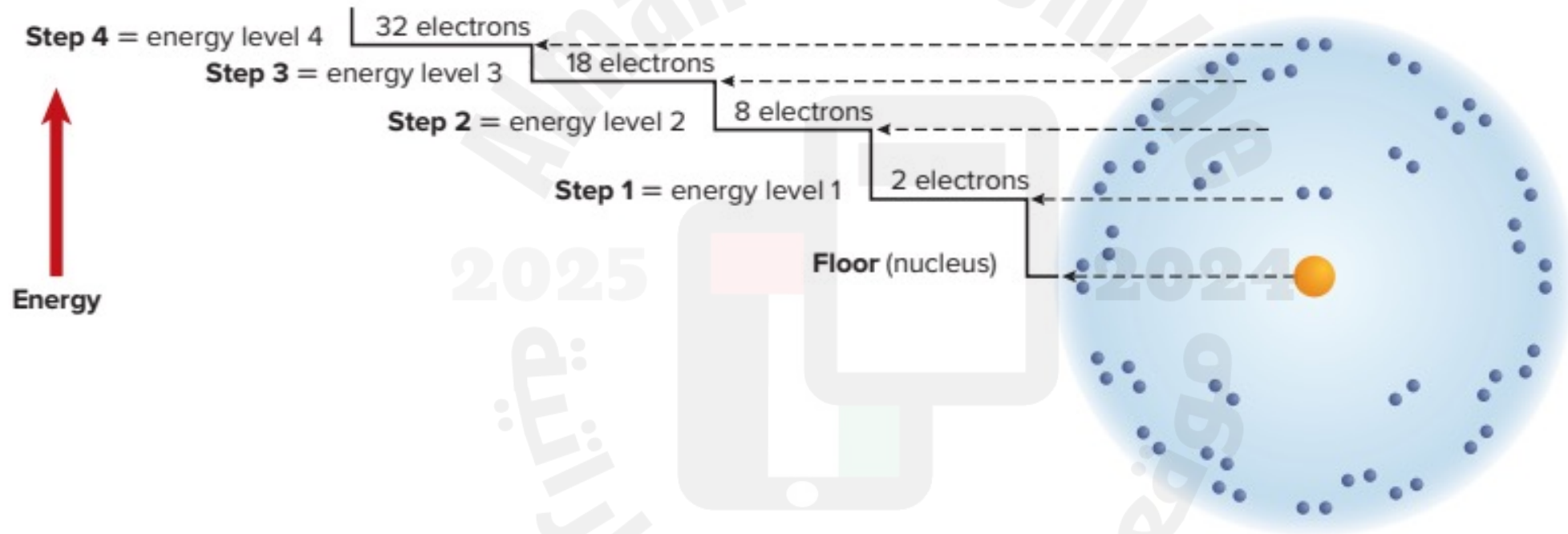
Figure 11 Energy levels in atoms can be represented by stairsteps. Each step away from the nucleus represents an increase in the amount of energy within the electrons. The higher energy levels can hold more electrons.

Horizontal rows – Periods- Elements

Of same period has <u>same energy levels</u>

Vertical columns- Groups- Elements of **same group** has same number of

<u>**valence electrons**</u> and Similar <u>**chemical properties**</u>

H·

Li·

Na·

K·

Rb·

Cs·

Fr·

Figure 13 The elements in group 1 have one electron in their outermost energy levels.

Energy level = Period number
Valence electrons = Group number

1. Carbon has valence electron 4 and 2 energy levels. So carbon belongs to group .... and period ....

2. Soidium has valence electron 1 and 3 energy levels. Sodium belongs to group .... and period ....

- Group 1 - ....valence electrons.
- Group 2 - ....valence electrons.
- Group 13 - ....valence electrons.
- Group 14 - ....valence electrons.
- Group 15 - ....valence electrons.
- Group 16 - ....valence electrons.
- Group 17 - ....valence electrons.
- Group 18 - ....valence electrons.

Element	Atomic number	Electron arrangement	Dot diagram	Period number	Group number
Sodium	11				
Fluorine	10				
Aluminum	13				
Nitrogen	7				
Argon	18				