

(d) a slice of pizza

VIDEO TUTOR: Problem 1.25

1.26 How would you classify the following items observed by Bill and Anna?

- (a) sand in a volleyball court
- (b) a baseball bat made entirely of aluminum
- (c) the contents of a balloon filled from a helium tank
- (d) a glass filled with a soft drink

1.27 Which of the following are examples of matter?

- (a) sunlight
- (b) gasoline
- (c) automobile exhaust
- (d) oxygen gas
- (e) iron pipe

1.28 Which of the following are not examples of matter?

- (a) light from a fluorescent bulb



Answer to Question 1.29

Elements are composed of only one type of atom. Compounds are made up of two or more different elements.

(e) heat from a welding torch

1.29 How are elements distinguished from compounds?

1.30 How are homogeneous mixtures distinguished from heterogeneous mixtures?

1.31 List characteristics of metals.

1.32 List characteristics of nonmetals.

1.33 Name the following elements.

- (a) Ti
- (b) Ta
- (c) Th
- (d) Tc
- (e) Tl

1.34 Name the following elements.

- (a) C
- (b) Ca
- (c) Cr
- (d) Co



- (a) sand in a volleyball court
- (b) a baseball bat made entirely of aluminum
- (c) the contents of a balloon filled from a helium tank
- (d) a glass filled with a soft drink



1.27 Which of the following are examples of matter?

- (a) sunlight
- (b) gasoline
- (c) automobile exhaust
- (d) oxygen gas
- (e) iron pipe

1.28 Which of the following are not examples of matter?

- (a) light from a fluorescent bulb
- (b) sand
- (c) wheelbarrow rolling down a ramp
- (d) helium balloons
- (e) heat from a welding torch

1.29 How are elements classified?

1.30 How are homogeneous mixtures different from heterogeneous mixtures?

Answer to Question 1.33
(a) titanium

1.31 List characteristics of metals.

1.32 List characteristics of nonmetals.

1.33 Name the following elements.

- (a) Ti
- (b) Ta
- (c) Th
- (d) Tc
- (e) Tl

1.34 Name the following elements.

- (a) C
- (b) Ca
- (c) Cr
- (d) Co
- (e) Cu
- (f) Cl
- (g) Cs

heat from a welding torch
re elements distinguished from compounds
re homogeneous mixtures distinguished
es?

characteristics of metals. [A:]

characteristics of nonmetals.

the following

Ti [A:]

Ta [A:] ~~is~~ tantalum

Th [A:]

Tc [A:]

Tl [A:]

the following elements.

C

Ca

Cr

Co

heat from a welding torch

are elements distinguished from compounds?

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es?

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characteristics of nonmetals.

the follow

Ti 

Ta 

Th 
.....

Tc 

Tl 

the following elements.

C

Ca

Cr

Co

Cu



Answer to Question 1.33
(c) thorium

(d) helium balloons

(e) heat from a welding torch

How are elements distinguished from compounds? {A:}

How are homogeneous mixtures distinguished from heterogeneous mixtures?

List the characteristics of metals. {A:}

List the characteristics of nonmetals.

Name the following elements.

(a) Ti {A:}

(b) Ta {A:}

(c) Th {A:}

(d) Tc {A:}

(e) Tl {A:}

Name the following elements.

(a) C

(b) Ca

(c) Cr

(d) Co

(e) Cu

(f) Cl

(g) Cs



Answer to Question 1.33

(d) technetium

(d) helium balloons

(e) heat from a welding torch

How are elements distinguished from compounds? A:

How are homogeneous mixtures distinguished from heterogeneous mixtures?

List the characteristics of metals. A:

List the characteristics of nonmetals.

Name the following elements.

(a) Ti A:

(b) Ta A:

(c) Th A:

(d) Tc A:

(e) Tl A:

Name the following elements.

(a) C

(b) Ca

(c) Cr

(d) Co

(e) Cu

(f) Cl

(g) Cs



Answer to Question 1.33

(e) thallium

(b) Ca

(c) Cr

(d) Co

(e) Cu

(f) Cl

(g) Cs

[VIDEO TUTOR: Problem 1.34](#)

1.35 Name the following elements.

(a) B 

(b) Ba 

(c) Be 

(d) Br 

(e) Bi 

1.36 Name the following elements.

(a) S

(b) Si

(c) Se

(d) Sr

(e) Sn



Answer to Question 1.35

(a) boron

1.37 Name the following elements.

(a) N 

(b) Fe 

(c) Mn 

(b) Ca

(c) Cr

(d) Co

(e) Cu

(f) Cl

(g) Cs

VIDEO TUTOR: Problem 1.34

1.35 Name the following elements.

(a) B

(b) Ba

(c) Be

(d) Br

(e) Bi

1.36 Name the following elements.

(a) S

(b) Si

(c) Se

(d) Sr

(e) Sn

Answer to Question 1.35

(b) barium

1.37 Name the following elements.

(a) N

(b) Fe

(c) Mn

1.34 Name the following elements.

- (a) C
- (b) Ca
- (c) Cr
- (d) Co
- (e) Cu
- (f) Cl
- (g) Cs

 [VIDEO TUTOR: Problem 1.34](#)

1.35 Name the following elements.

- (a) B 
- (b) Ba 
- (c) Be 
- (d) Br 
- (e) Bi 

1.36 Name the following elements.

- (a) S
- (b) Si
- (c) Se
- (d) Sr
- (e) Sn



Answer to Question 1.35
(c) beryllium

1.37 Name the following elements.

- (a) N 
- (b) Fe 
- (c) Mn 
- (d) Mg 

1.34 Name the following elements.

- (a) C
- (b) Ca
- (c) Cr
- (d) Co
- (e) Cu
- (f) Cl
- (g) Cs

 VIDEO TUTOR: Problem 1.34

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- (a) B 
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- (c) Be 
- (d) Br 
- (e) Bi 

1.36 Name the following elements.

- (a) S
- (b) Si
- (c) Se
- (d) Sr
- (e) Sn



Answer to Question 1.35
(d) bromine

1.37 Name the following elements.

- (a) N 
- (b) Fe 
- (c) Mn 
- (d) Mg 

1.34 Name the following elements.

- (a) C
- (b) Ca
- (c) Cr
- (d) Co
- (e) Cu
- (f) Cl
- (g) Cs

 VIDEO TUTOR: Problem 1.34

1.35 Name the following elements.

- (a) B 
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- (c) Be 
- (d) Br 
- (e) Bi 

1.36 Name the following elements.

- (a) S
- (b) Si
- (c) Se
- (d) Sr
- (e) Sn



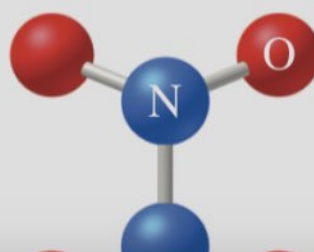
Answer to Question 1.35
(e) bismuth

1.37 Name the following elements.

- (a) N 
- (b) Fe 
- (c) Mn 
- (d) Mg 

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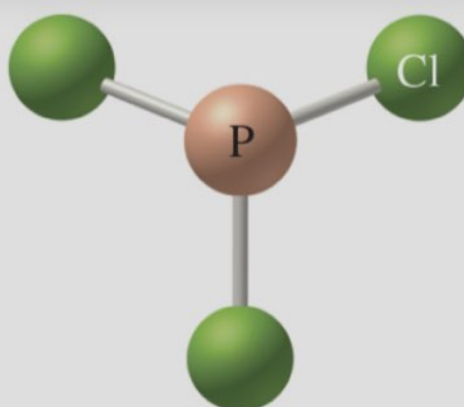
- 1.47 Elemental hydrogen normally exists as two hydrogen atoms together. Write the formula for this molecule, and draw a picture to represent how it might look on a molecular level. [A:](#)
- 1.48 Elemental chlorine normally exists as two chlorine atoms bonded together. Write the formula for this molecule, and draw a picture to represent how it might look on a molecular level.
- 1.49 This image is a representation for a compound containing nitrogen and oxygen. Write the formula for this compound. [A:](#)



Answer to Question 1.49

The chemical formula is N_2O_4 .

- 1.50 This image represents a compound containing phosphorus and chlorine. Write the formula for this compound.

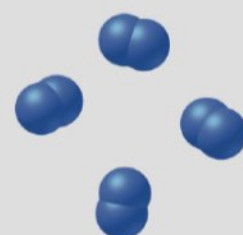


[VIDEO TUTOR: Problem 1.50](#)

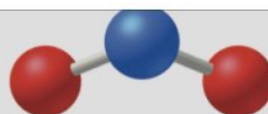
- 1.51 Which of the images represents a mixture of an element and a compound? [A:](#)



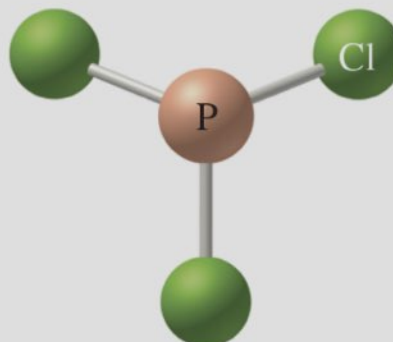
A



B



- 1.50 This image represents a compound containing phosphorus and chlorine. Write the formula for this compound.

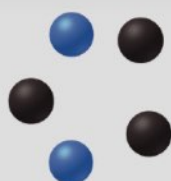


[▶ VIDEO TUTOR: Problem 1.50](#)

- 1.51 Which of the images represents a mixture of an element and a compound? 

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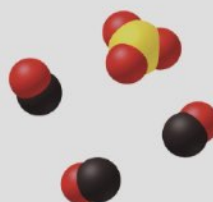
Answer to Question 1.51
Image D represents a mixture of an element and a compound.



C



D



E

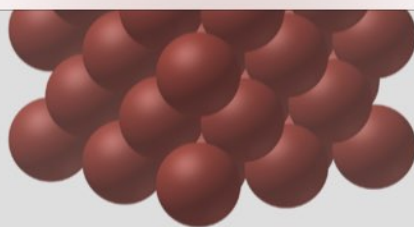


[▶ VIDEO TUTOR: Problem 1.51](#)

- 1.52 Which of the images in [Question 1.51](#)  represents a pure substance that is a compound?

[▶ VIDEO TUTOR: Problem 1.52](#)

- 1.53 Classify each of the following as an element or a compound. 



- 1.62 Draw a picture of the gaseous state of the substance shown in [Question 1.61](#).
- 1.63 How might you symbolically represent a homogeneous mixture of oxygen, O_2 , and water? [A:](#)
- 1.64 Why does the symbol $H_2O(aq)$ make no sense?

Physical and Chemical Changes and Properties of Matter

- 1.65 At the beginning of the chapter, Anna and Bill made many observations about what they saw. Some of their observations included color, texture, and shininess. Are these physical or chemical properties? [A:](#)
- 1.66 At the beginning of the chapter, we learned how to classify processes like a truck running on a road, the rusting of metal. After reading the chapter, would you classify these as physical or chemical changes?
- 1.67 A slice of Swiss cheese contains 45 mg of sodium.
- What is this mass in units of grams? [A:](#)
 - What is this mass in units of ounces (oz)? ($16 \text{ oz} = 453.6 \text{ g}$) [A:](#)
 - What is this mass in pounds (lb)? ($1 \text{ lb} = 453.6 \text{ g}$) [A:](#)
- [VIDEO TUTOR: Problem 1.67](#)
- 1.68 A package of Swiss cheese has a mass of 0.340 kg.
- What is this mass in grams?
 - What is this mass in ounces (oz)? ($16 \text{ oz} = 453.6 \text{ g}$)
 - What is this mass in pounds (lb)? ($1 \text{ lb} = 453.6 \text{ g}$)
- 1.69 A grain of salt has a mass of about $1.0 \times 10^{-4} \text{ g}$. What is its mass in the following units?
- milligrams [A:](#)
 - micrograms [A:](#)
 - kilograms [A:](#)
- 1.70 If a dog has a mass of 15.2 kg, what is its mass in the following

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- 1.65 At the beginning of the chapter, Anna and Bill made many observations about what they saw. Some of their observations included color, texture, and shininess. Are these physical or chemical properties? [A:](#)
- 1.66 At the beginning of the chapter, you were asked to classify processes like a truck running on gas or welding pieces of metal. After reading the chapter, would you classify these processes as physical or chemical changes?
- 1.67 A slice of Swiss cheese contains 45 mg of sodium.
- (a) What is this mass in units of grams? [A:](#)
 - (b) What is this mass in units of ounces (oz)? (16 oz = 453.6 g) [A:](#)
 - (c) What is this mass in pounds (lb)? (1 lb = 453.6 g) [A:](#)

[▶ VIDEO TUTOR: Problem 1.67](#)

- 1.68 A package of Swiss cheese has a mass of 0.340 kg.
- (a) What is this mass in grams?
 - (b) What is this mass in units of ounces (oz)? (16 oz = 453.6 g)
 - (c) What is this mass in pounds (lb)? (1 lb = 453.6 g)
- 1.69 A grain of salt has a mass of 0.10 mg. What is its mass in the following units?

×

Answer to Question 1.69
(a) 0.10 mg

- (a) milligrams [A:](#)
- (b) micrograms [A:](#)
- (c) kilograms [A:](#)

- 1.70 If a dog has a mass of 15.2 kg, what is its mass in the following units?
- (a) grams
 - (b) milligrams
 - (c) micrograms

[▶ VIDEO TUTOR: Problem 1.70](#)

- 1.71 If you drank 1.2 L of a sports drink, what volume did you consume in the following units?
- (a) milliliters [A:](#)
 - (b) cubic centimeters [A:](#)
 - (c) cubic meters [A:](#)

- 1.72 If the volume of helium in a balloon is 145 cm³, what is its volume in liters?

- 1.65 At the beginning of the chapter, Anna and Bill made many observations about what they saw. Some of their observations included color, texture, and shininess. Are these physical or chemical properties?
- 1.66 At the beginning of the chapter, you were asked to classify processes like a truck running on gas or welding pieces of metal. After reading the chapter, would you classify these processes as physical or chemical changes?
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(a) What is this mass in units of grams?

(b) What is this mass in units of ounces (oz)? (16 oz = 453.6 g)

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 [VIDEO TUTOR: Problem 1.67](#)

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- 1.69 A grain of salt has a mass of 1.0×10^{-4} g. What is its mass in the following units?

(a) milligrams

(b) micrograms

(c) kilograms

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(a) grams

(b) milligrams

(c) micrograms

 [VIDEO TUTOR: Problem 1.70](#)

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[▶ VIDEO TUTOR: Problem 1.67](#)

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- 1.69 A grain of salt has a mass of 1.0×10^{-4} g. What is its mass in the following units?

- (a) milligrams [A:](#)
- (b) micrograms [A:](#)
- (c) kilograms [A:](#)

- 1.70 If a dog has a mass of 15.2 kg, what is its mass in the following units?
- (a) grams
- (b) milligrams
- (c) micrograms

[▶ VIDEO TUTOR: Problem 1.70](#)

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 VIDEO TUTOR: Problem 1.67

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- (a) grams
 - (b) milligrams
 - (c) micrograms

 VIDEO TUTORIAL

- 1.71 If you drank 1.2 L of a beverage, how much volume did you consume in the following units?
- (a) milliliters
- (b) cubic centimeters
- (c) cubic meters
- 1.72 If the volume of helium in a balloon is 145 cm^3 , what is its volume in the following units?
- (a) milliliters
- (b) liters
- (c) cubic meters

VIDEO TUTOR: Problem 1.73

- 1.74 If a cubic box (all sides the same length) has a volume of 1.0 L, what is the length of each side of the box?

 VIDEO TUTOR: Problem 1.74

- 1.75 A slice of cheese has a mass of 28 g and a volume of 21 cm³. What

▶ [VIDEO TUTOR: Problem 1.67](#)

- 1.68 A package of Swiss cheese has a mass of 0.340 kg.
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- (a) milligrams {A:}
 - (b) micrograms {A:}
 - (c) kilograms {A:}
- 1.70 If a dog has a mass of 15.2 kg, what is its mass in the following units?
- (a) grams
 - (b) milligrams
 - (c) micrograms

▶ [VIDEO TUTOR: Problem 1.71](#)

- 1.71 If you drank 1.2 L of water, what volume did you consume in the following units?
- (a) milliliters {A:}
 - (b) cubic centimeters {A:}
 - (c) cubic meters {A:}

- 1.72 If the volume of helium in a balloon is 145 cm^3 , what is its volume in the following units?
- (a) milliliters
 - (b) liters
 - (c) cubic meters

- 1.73 If the length, width, and height of a box are 8.0 cm, 5.0 cm, and 4.0 cm, respectively, what is the volume of the box in units of milliliters and liters? {A:}

▶ [VIDEO TUTOR: Problem 1.73](#)

- 1.74 If a cubic box (all sides the same length) has a volume of 1.0 L, what is the length of each side of the box?

▶ [VIDEO TUTOR: Problem 1.74](#)

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▶ [VIDEO TUTOR: Problem 1.67](#)

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- (a) milligrams {A:}
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- (a) grams
 - (b) milligrams
 - (c) micrograms

▶ [VIDEO TUTOR: Problem 1.71](#)

- 1.71 If you drank 1.2 L of water, what volume did you consume in the following units?
- (a) milliliters {A:}
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 - (c) cubic meters {A:}
- 1.72 If the volume of helium in a balloon is 145 cm^3 , what is its volume in the following units?
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▶ [VIDEO TUTOR: Problem 1.73](#)

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▶ [VIDEO TUTOR: Problem 1.74](#)

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However, stone A has a mass of 0.52 g and stone B has a mass of 0.42 g. If diamond has a density of 3.5 g/cm^3 , could the stones be real diamonds? Explain.

VIDEO TUTOR: Problem 1.76

1.77 If the density of a sugar solution is 1.30 g/mL , what volume of this solution has a mass of 50.0 g ?

1.78 The density of a certain type of plastic is 0.75 g/cm^3 . If a sheet of this plastic is 10.0 m long, 1.0 m wide, and 1 cm thick, what is its mass?

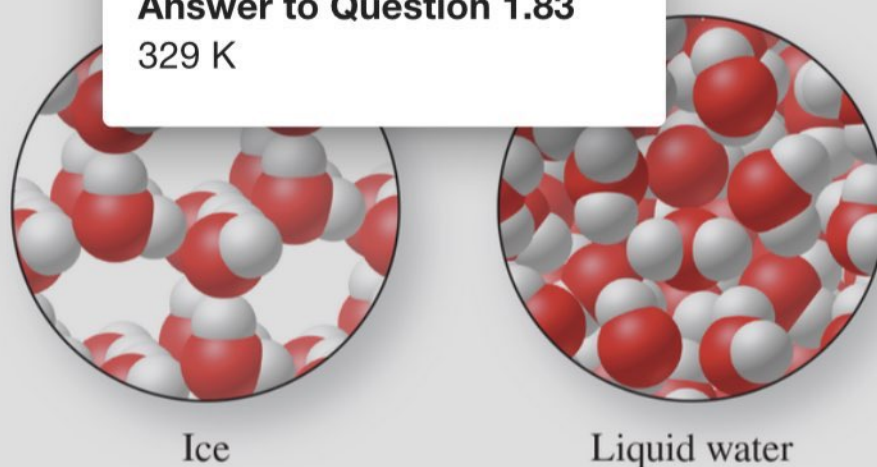
VIDEO TUTOR: Problem 1.78

1.79 Why do liquids have greater densities than gases?

1.80 When a balloon filled with air is heated, the balloon increases in volume. Does the density of the air in the balloon increase, decrease, or remain the same?

1.81 A piece of plastic sinks in oil but floats in water. Place these three substances in order from lowest density to greatest density.

1.82 What special molecular property of water explains why ice floats in water?



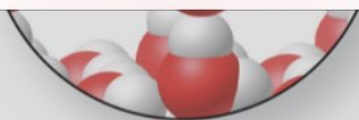
1.83 Acetone, a component of some types of fingernail polish remover, has a boiling point of 56°C . What is its boiling point in units of kelvin?

VIDEO TUTOR: Problem 1.83

1.84 The boiling point of liquid nitrogen is 77 K . What is its boiling point in units of degrees Celsius?

1.85 What is the difference in temperature between the boiling point of water and the freezing point of water in each of the following temperature scales?

(a) Celsius scale



Ice



Liquid water



1.83 Acetone, a component of some types of fingernail polish remover, has a boiling point of 56°C . What is its boiling point in units of kelvin?

[▶ VIDEO TUTOR: Problem 1.83](#)

1.84 The boiling point of liquid nitrogen is 77 K. What is its boiling point in units of degrees Celsius?

1.85 What is the difference in temperature between the boiling point of water and the freezing point of water in each of the following temperature scales?

(a) Celsius scale

(b) Kelvin scale

(c) Fahrenheit scale

[▶ VIDEO TUTOR: Problem 1.87](#)

1.86 If the temperature decreases from 60.0°C to 25.0°C , what is the decrease in temperature in units of degrees Celsius and kelvin?

1.87 Does the boiling point of a substance depend on how much of this substance you have?

1.88 Does the melting point of a substance depend on how much of this substance you have?

1.89 Identify each of the following as a physical property or a chemical property.

(a) mass

(b) density

(c) flammability

(d) resistance to corrosion

(e) melting point

(f) reactivity with water

[▶ VIDEO TUTOR: Problem 1.89](#)

1.90 Identify each of the following as a physical property or a chemical property.

(a) boiling point

×

Answer to Question 1.87

no

water and the freezing point of water in each of the following temperature scales? 

- (a) Celsius scale
- (b) Kelvin scale
- (c) Fahrenheit scale

 [VIDEO TUTOR: Problem 1.85](#)

- 1.86 If the temperature of a cup of coffee decreases from 60.0°C to 25.0°C, what is the decrease in temperature in units of degrees Celsius and kelvin? Page 51
- 1.87 Does the boiling point of a substance depend on how much of this substance you have? 
- 1.88 Does the melting point of a substance depend on how much of this substance you have?
- 1.89 Identify each of the following as a physical property or a chemical property. 

- (a) mass
- (b) density



Answer to Question 1.89

Physical properties are (a) mass, (b) density, and (e) melting point. Chemical properties are (c) flammability, (d) resistance to corrosion, and (f) reactivity with water.

 [VIDEO TUTOR: Problem 1.89](#)

- 1.90 Identify each of the following as a physical property or a chemical property.
- (a) boiling point
 - (b) reactivity with oxygen
 - (c) resistance to forming compounds with other elements
 - (d) volume
- 1.91 Identify each of the following as a physical change or a chemical change. 
- (a) boiling acetone
 - (b) dissolving oxygen gas in water
 - (c) combining hydrogen and oxygen gas to make water
 - (d) burning gasoline
 - (e) screening rocks from sand
 - (f) the conversion of ozone to oxygen, $2\text{O}_3(g) \longrightarrow 3\text{O}_2(g)$

 [VIDEO TUTOR: Problem 1.91](#)



(c) resistance to forming compounds with other elements

(d) volume

1.91 Identify each of the following as a physical change or a chemical change.

(a) boiling acetone

(b) dissolving oxygen gas in water

(c) combining hydrogen and oxygen gas to make water

(d) burning gasoline

(e) screening rocks from sand

(f) the conversion of ozone to oxygen, $2\text{O}_3(g) \longrightarrow 3\text{O}_2(g)$

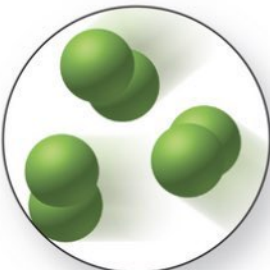
VIDEO TUTOR: Problem 1.91

1.92 Identify each of the following as a physical change or a chemical change.

✕

Answer to Question 1.93

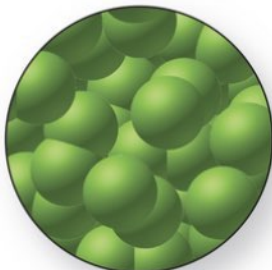
Symbolic: $\text{Cl}_2(g) \longrightarrow \text{Cl}_2(l)$. A molecular-level diagram is shown.



Gas

Condensation

→

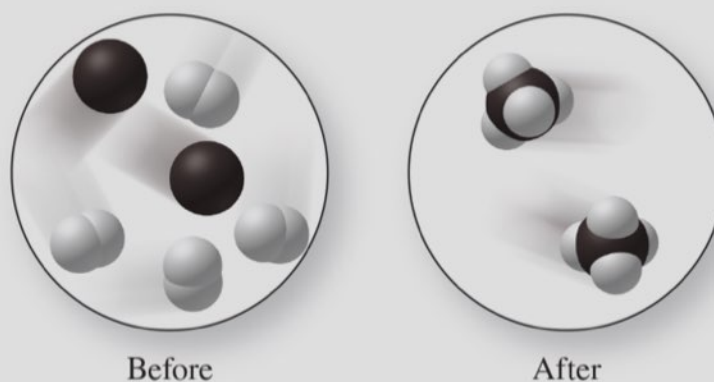


Liquid

1.93

1.94 Write a symbolic representation and a molecular-level representation for the process of freezing oxygen, O_2 .

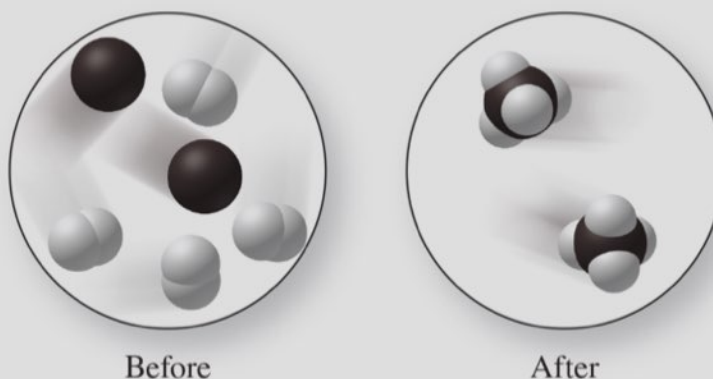
1.95 Do the changes shown in this diagram represent a physical or chemical change?



VIDEO TUTOR: Problem 1.95

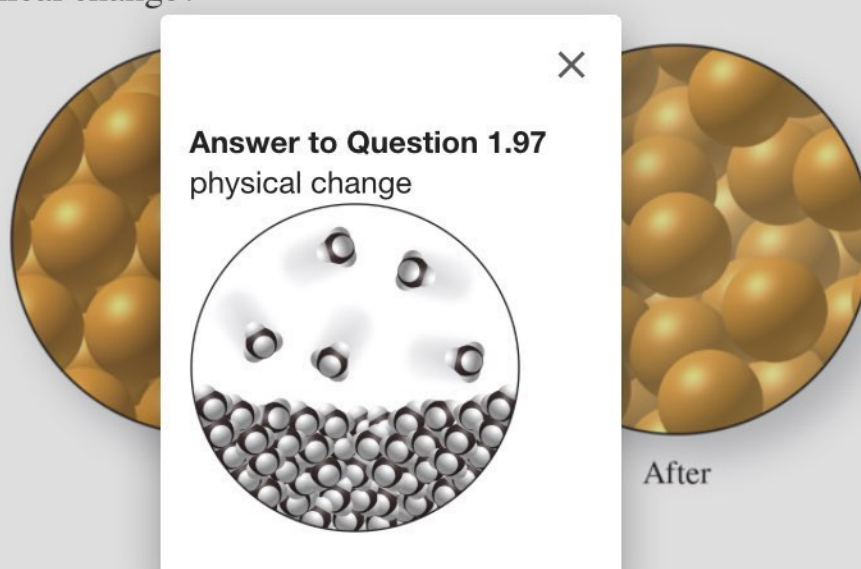
1.96 Do the changes shown in this diagram represent a physical or chemical change?

- 1.94 Write a symbolic representation and a molecular-level representation for the process of freezing oxygen, O_2 .
- 1.95 Do the changes shown in this diagram represent a physical or chemical change? [A:](#)



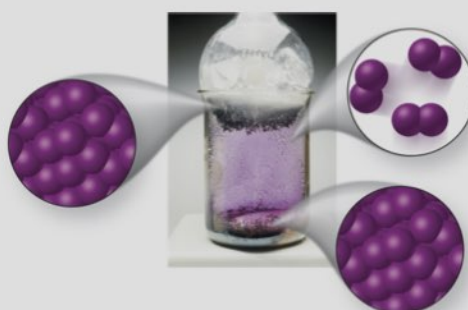
▶ [VIDEO TUTOR: Problem 1.95](#)

- 1.96 Do the changes shown in this diagram represent a physical or chemical change?



▶ [VIDEO TUTOR: Problem 1.96](#)

- 1.97 Draw a picture that shows CH_4 (shown in the “After” image in [Question 1.95](#) [A:](#)) condensing from a gas to a liquid. Does this picture represent a physical or a chemical change? [A:](#)
- 1.98 Draw a picture that shows water boiling. Does this picture represent a physical or chemical change?
- 1.99 The image shows what happens when iodine, I_2 , is placed in the bottom of a beaker and heated. Is this a physical or chemical change? (Note that the photo shows an inner flask containing ice.) [A:](#)



fountains are built with coins in them. Suggest experiments to test this hypothesis.

- 1.121 You observe a piece of balsa wood floating on water and propose the hypothesis that all wood floats on water because wood is less dense than water. Suggest experiments to test this hypothesis. 

Additional Questions

- 1.122 Rank the following measurements in order from smallest to largest: 1.0×10^{-4} m, 2.0×10^{-5} m, 3.0×10^{-6} km, 4.0×10^2 mm, 0.0 m, 1.0 m.

VIDEO TUTOR: Problem 1.122

- 1.123 The density of air in a balloon is less at high altitudes than at low altitudes. Explain this difference. 
- 1.124 If the temperature in a room increases from 20.0°C to 30.0°C , what is the temperature change in units of kelvin?
- 1.125 If you have a sample of zinc and a sample of copper, and both have the same mass, 

VIDEO TUTOR: Problem 1.127

- 1.126 Give the symbol for the element helium. 
- 1.127 Give the symbol for the element neon. 

Answer to Question 1.127

(a) He

- (a) helium 
- (b) neon 
- (c) argon 
- (d) krypton 
- (e) xenon 
- (f) radon 
- 1.128 The red blood cell (RBC) count for a normal female is about 5 million RBCs per μL ($1 \mu\text{L} = 1 \text{ mm}^3$). How many red blood cells are in a gallon of normal female blood?
- 1.129 Recycling facilities around the world use a variety of techniques to separate different types of recyclable waste. Wet separation is a method that involves processing certain kinds of waste (for example, glass, sand, and metal) based on their densities relative to water. Is this type of separation based on the physical or chemical properties of the recyclable waste? 
- 1.130 These samples of metals have the same mass. Which has the greater density?



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VIDEO TUTOR: Problem 1.127

- 1.126 Give the symbol for the element with the following atomic number: (b) Ne
- 1.127 Give the symbol for the element with the following atomic number: (a) helium

- (b) neon
- (c) argon
- (d) krypton
- (e) xenon
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▶ VIDEO TUTOR: Problem 1.122

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- 1.125 If you have a sample of zinc and a sample of copper, and both have the same mass, [A:](#)

▶ VIDEO TUTOR

Answer to Question 1.127

- 1.126 Give the symbol for the element argon. [A:](#)
- 1.127 Give the symbol for the element helium. [A:](#)

- (a) helium [A:](#)
- (b) neon [A:](#)
- (c) argon [A:](#)
- (d) krypton [A:](#)
- (e) xenon [A:](#)
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VIDEO TUTOR: Problem 1.122

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VIDEO TUTOR

Answer to Question 1.127

- 1.126 Give the symbol for the element krypton.
- 1.127 Give the symbol for the element helium.

- (a) helium
- (b) neon
- (c) argon
- (d) krypton
- (e) xenon
- (f) radon

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Additional Questions

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VIDEO TUTOR: Problem 1.122

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- 1.124 If the temperature in a room increases from 20.0°C to 30.0°C , what is the temperature change in units of kelvin?
- 1.125 If you have a sample of zinc and a sample of copper, and both have the same mass, 

VIDEO TUTOR: Problem 1.127

- 1.126 Give the symbol for the noble gas that is a colorless, odorless, and tasteless gas. 
- 1.127 Give the symbol for the noble gas that is a colorless, odorless, and tasteless gas. 

Answer to Question 1.127
(e) Xe

- (a) helium 
- (b) neon 
- (c) argon 
- (d) krypton 
- (e) xenon 
- (f) radon 
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Page 53

Additional Questions

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VIDEO TUTOR: Problem 1.122

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- 1.125 If you have a sample of zinc and a sample of copper, and both have the same mass,

VIDEO TUTOR: Problem 1.127

- 1.126 Give the symbol for the element with atomic number 86.
- 1.127 Give the symbol for the element with atomic number 86.

Answer to Question 1.127
(f) Rn

- (a) helium
- (b) neon
- (c) argon
- (d) krypton
- (e) xenon
- (f) radon
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- 1.123 The density of air in a balloon is less at high altitudes than at low altitudes. Explain this difference. [A:](#)
- 1.124 If the temperature in a room increases from 20.0°C to 30.0°C, what is the temperature change in units of kelvin?
- 1.125 If you have a sample of zinc and a sample of copper, and both have the same mass, which has the greatest volume? [A:](#)

▶ [VIDEO TUTOR: Problem 1.125](#)

- 1.126 Give the symbols for potassium and phosphorus.
- 1.127 Give the symbols for the following noble gas elements:
- (a) helium [A:](#)
 - (b) neon [A:](#)
 - (c) argon [A:](#)
 - (d) krypton [A:](#)
 - (e) xenon [A:](#)
 - (f) radon [A:](#)
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- 1.130 These samples of metals have the same mass. Which has the greater density?



A B
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▶ [VIDEO TUTOR: Problem 1.130](#)

- 1.131 The typical dose of epinephrine at a particular concentration administered to a patient under cardiac arrest is 0.1 mg per kilogram of body weight. If a patient weighs 180 lb, how much epinephrine should be administered? [A:](#)

▶ [VIDEO TUTOR: Problem 1.131](#)

- 1.132 About 70 million tons of paper are used per year in the United States.