Assignment 1:
Read each description and determine whether it is a pure substance or mixture. Then further classify the matter (element, compound, homogeneous mixture, heterogeneous mixture).

<table>
<thead>
<tr>
<th>Description</th>
<th>Pure Substance or Mixture?</th>
<th>Classification?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chocolate syrup is added to milk and stirred</td>
<td>Milk</td>
<td>Homogeneous mixture</td>
</tr>
<tr>
<td>2. Copper metal (used to make wires)</td>
<td>Copper</td>
<td>Element</td>
</tr>
<tr>
<td>3. Sand is added to water</td>
<td>Water</td>
<td>Homogeneous mixture</td>
</tr>
<tr>
<td>4. Distilled water</td>
<td>Water</td>
<td>Homogeneous mixture</td>
</tr>
<tr>
<td>5. Tap water</td>
<td>Water</td>
<td>Homogeneous mixture</td>
</tr>
<tr>
<td>6. Diamond</td>
<td>Diamond</td>
<td>Element</td>
</tr>
<tr>
<td>7. Table sugar</td>
<td>Sugar</td>
<td>Compound</td>
</tr>
<tr>
<td>8. Table sugar added to a cup of coffee and stirred</td>
<td>Coffee</td>
<td>Heterogeneous mixture</td>
</tr>
<tr>
<td>9. Kool-aid is added to water</td>
<td>Kool-aid</td>
<td>Compound</td>
</tr>
<tr>
<td>10. Coca-cola</td>
<td>Coca-cola</td>
<td>Compound</td>
</tr>
<tr>
<td>11. Helium gas (used to inflate a balloon)</td>
<td>Helium</td>
<td>Element</td>
</tr>
<tr>
<td>12. Mercury metal (used in old thermometers)</td>
<td>Mercury</td>
<td>Element</td>
</tr>
<tr>
<td>13. Hydrogen gas (an explosive gas)</td>
<td>Hydrogen</td>
<td>Element</td>
</tr>
<tr>
<td>14. Trail mix (peanuts, pretzels and M&amp;M's)</td>
<td>Trail mix</td>
<td>Compound</td>
</tr>
<tr>
<td>15. The air we breathe</td>
<td>Air</td>
<td>Heterogeneous mixture</td>
</tr>
</tbody>
</table>

Assignment 2:
Complete the chart below. Elements are on the periodic table. They cannot be broken down. A compound is two or more DIFFERENT elements that are chemically bonded. Homogeneous Mixtures (M) are different throughout. Heterogeneous Mixtures (HM) are the same throughout.

<table>
<thead>
<tr>
<th><em>Diamond</em> (C)</th>
<th><em>Water</em> (H₂O)</th>
<th><em>Dry Ice</em> (CO₂)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Sugar</em> (C₆H₁₂O₆)</td>
<td><em>Alcohol</em> (CH₃OH)</td>
<td><em>Baking Soda</em> (NaHCO₃)</td>
</tr>
<tr>
<td><em>Milk</em></td>
<td><em>Foil of Garbage</em></td>
<td><em>Titanium</em> (Ti)</td>
</tr>
<tr>
<td><em>Air</em></td>
<td><em>Ammonia</em> (NH₃)</td>
<td><em>Iron</em> (Fe)</td>
</tr>
<tr>
<td><em>Sulfuric Acid</em> (H₂SO₄)</td>
<td><em>Salt</em> (NaCl)</td>
<td><em>Popcorn and seeds</em></td>
</tr>
<tr>
<td><em>Gasoline</em></td>
<td><em>Moose Soup</em></td>
<td><em>Gold</em> (Au)</td>
</tr>
<tr>
<td><em>Krypton</em> (Kr)</td>
<td><em>Wood</em></td>
<td><em>Book</em></td>
</tr>
<tr>
<td><em>Bromuth</em> (Br)</td>
<td><em>Salt Water</em></td>
<td><em>A cat</em></td>
</tr>
<tr>
<td><em>Uranium</em> (U)</td>
<td><em>Ink</em></td>
<td><em>Concrete</em></td>
</tr>
</tbody>
</table>

Assignment 3:
Create a song, poem, or essay that defines an unbalanced force and a balanced force. Also, state the characteristics and an example for each force.

Assignment 4:
1. **Vocabulary Matching**
   Match the term in the box to the correct definition.
   - Range of frequencies of electromagnetic waves
   - Height of a wave from the midpoint to its highest or lowest point
   - Electromagnetic waves that can be detected by the human eye
   - Complete wave cycles per unit of time
   - Distance from crest to crest of two consecutive waves
   - Frequency
   - Amplitude
   - Wavelength
   - Electromagnetic spectrum
   - Visible light

Assignment 5:
Write or draw pictures: I want to know what you like about science. What will you do this summer? Are you excited for next year or nervous. (Note: This is a personal statement. I will not use it elsewhere.)
After the Confederates surrendered at Appomattox Court House, the United States needed to start rebuilding after four years of fighting in the Civil War. Although the war was over, southerners were still resentful and angry with northerners. In 1865, the 13th Amendment was ratified, abolishing slavery in the United States. Over four million freedmen, men and women who had been slaves, were living in the south changing the dynamics of the southern society forever. In addition, the south was devastated from the Union's total war campaigns, destroying the terrain and infrastructure. President Lincoln was extremely worried about how to rebuild the south and mend the country. Thus, the country entered an era focused on rebuilding the south known as Reconstruction.

1. What was the 13th Amendment?

2. Who were freedom?

3. Define Reconstruction.

Lincoln wanted a moderate Reconstruction plan, which would allow the south to unite with the north under generous terms. This would allow the country to move forward from the four years of conflict without much resentment. The problem, however, was that Abraham Lincoln was assassinated by John Wilkes Booth shortly after the Civil War and prior to implementing his Reconstruction plan. Thus, Reconstruction became a debate between Lincoln's successor, Andrew Johnson, and the growing number of radical Republicans in Congress. Despite Johnson's attempt to implement a lenient Reconstruction plan in the south, Radical Republicans were able to overpower his plan and implement a harsh Reconstruction plan with the Reconstruction Act of 1867. As part of the Reconstruction Act, the south was divided into five military districts. Within these districts, the United States military occupied the territory and enforced Reconstruction policies, including allowing African Americans the right to vote. With the ratification of the 14th Amendment, people born or naturalized in the United States were considered citizens, including African Americans. Thus, as citizens, they were entailed to their right to vote. The military occupation of the south further intensified the biracial resentment in the south.

DIRECTIONS: Read the passages below regarding the Civil War and answer the corresponding questions. Highlight or underline the answers to the questions in each passage. Enjoy!

2. Why did Lincoln want a lenient Reconstruction plan?

3. What was the 14th Amendment?

4. Under the Reconstruction Act, how were policies enforced?

5. What right did southerners attempt to deny to African Americans?

However, not all southerners resisted northern Reconstruction. Scalawags, a nickname given to southern Republicans, supported Reconstruction in the south. Many scalawags were businesspeople that southerners that supported their equality. Despite an 1870 law passed by Congress that prohibited the use of violence to keep citizens from voting, the KKK's threat of violence maintained its influence to keep many African Americans away from the voting polls.

12. What was the Ku Klux Klan?

With the protection of the 15th Amendment, the southern states could not deny African Americans the right to vote because of their race, color, or previous condition of servitude. In reaction to the 15th Amendment, southern states did what they could to continue to deny African Americans the right to vote in the south. They did not want the African American vote to impact legislation and gain power in the United States government. Therefore, groups and policies emerged in the south to restrict African Americans from voting.

13. Identify the poll tax?

14. Why was the poll tax effective?

15. What was the literacy test?
As the southern society continued to change and be plagued by racism and discrimination, the southern economy was also changing. Southern states understood that their economy could no longer be solely based on agriculture and trade, and they also needed to focus on industrialization. Henry Grady, a southern journalist, described southern states as the “New South” after the war, because the south began to build textile mills and manufacture goods as well. The south was determined not to rely on the north for trade and manufacturing. The south continued to produce cash crops, but the production changed when slavery ended. Plantation owners no longer had a free source of labor. During Reconstruction, plantation owners divided their land into small plots of land and rented the land to freedmen or poor white southerners, called sharecroppers. Plantation owners provided the crop seeds and received a portion of the harvest profits.

17. Describe the “New South.”

18. Who were sharecroppers?

As Reconstruction came to an official end in 1877 and the military occupation was disbanded, southern states adopted many segregation laws. Segregation is the legal separation of races. Southern laws, known as Jim Crow laws, separated white and blacks in various public places such as, schools, restaurants, theaters, trains, and hospitals. In 1896 legal segregation was challenged in the Supreme Court in the infamous case of Plessy vs. Ferguson. The decision of the Supreme Court stated that segregation was legal, as long as equal facilities were available for both whites and blacks. The reality in the south was that the government spent much less money funding black schools and providing for blacks in general. Segregation and the “separate but equal” decision made by the Supreme Court deemed controversial in the United States and was the basis for the Civil Rights Movement in the late 1900s.

19. What is segregation?

20. What was the decision of Plessy vs. Ferguson?

---

13. Amendment that guaranteed all citizens the right to vote.
   A. 13th  B. 14th  C. 15th  D. 19th

14. Amendment that made all former slaves citizens of the United States.
   A. 13th  B. 14th  C. 15th  D. 19th

15. Which American document led to the freedom of over four million slaves in the United States?
   A. The Declaration of War  B. The Emancipation Proclamation

16. established that California would join the Union as a free state.
   A. Missouri Compromise  B. Compromise of 1850  C. Lincoln's Reconstruction Plan  D. Election of 1860
Why Do We Vote on a Tuesday in November?
by Evan Andrews

This article is provided courtesy of History.com.

Even wonder why elections are held on Tuesdays? The answer lies with America's 19th-century farmers. As an article begins the custom of weekday voting in 1845, when Congress established a federal law designating the first Tuesday following the first Monday in November as Election Day. Before then, states were allowed to hold elections any time they pleased within a 34-day period before the first Wednesday in December. But this system had a few crucial flaws. Knowing the early voting results could affect turnout and sway opinion in states that held late elections, and those same last-minute voters could potentially decide the outcome of the entire election. Faced with those issues, Congress created the current Election Day in the hope of standardizing the voting process.

But why Tuesday in November? The answer stems from the agrarian makeup of 19th-century America. In the 1800s, most citizens worked as farmers and lived far from their polling places. Since people often traveled at least a day to vote, lawmakers needed to allow a two-day window for Election Day. Weekends were impractical, since most people spent Sundays in church, and Wednesday was market day for farmers. With this in mind, Tuesday was selected as the first and most convenient day of the week to hold elections.

Based on this evidence, what can you infer about the location of polling places?

A. Polling places were probably near the markets to which farmers traveled.
B. Polling places were probably on the outskirts of the city.
C. Polling places were probably near the churches that most people attended.
D. Polling places were probably near the church that most people attended.

What is the main idea of this text?

A. In the 1800s, most citizens of the United States worked as farmers and lived far from their polling place.
B. Election Day is on a Tuesday in November because of the day's convenience for farmers in 19th-century America.
C. Before 1845, states were allowed to hold elections any time they pleased within a 34-day period before the first Wednesday in December.
D. Before 1845, early voting results could affect turnout and sway opinion in states that held late elections.

Why might the author have written the title as a question?

A. To encourage readers to answer the question on their own before reading the article
B. To express confusion or a tradition for which there seems to be no explanation
C. To challenge a practice that has lasted much of its time over time
D. To prepare readers for a discussion of the answer to this question in the article

10. Explain whether the creation of Election Day improved the election process for Americans.

---

ReadWorks’

**If**

by Rudyard Kipling

If you can keep your head when all about you
Are losing theirs and blaming it on you,
If you can trust yourself when all men doubt you,
But make allowance for their doubting too;
If you can wait and not be bitter,Or, being led astray, don't deal in lies,
Or being hated, don't give way to hating,
And yet don't look too good, nor talk too wise;
If you can bear to hear the truth you've spoken
Twisted by knaves to make a trap for fools,
Or watch the things you gave your life to, broken,
And stoop and build 'em up with worn-out tools;
If you can make one heap of all your winningsAnd risk it on one turn of pitch-and-toss,And lose, and start again at your beginnings,
And never breathe a word about your loss;
If you can force your heart and nerve and sinewTo serve your turn long after they are gone,Except the Will which says to them: 'Hold on!'
If you can talk with crowds and keep your virtue,Or walk with Kings—and lose your common touch,
If you can laugh with fooled, or angered friends,And yet not laugh yourself, or feel them too much:
If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the Earth and everything that's in it,
And—which is more—you'll be a Man, my son!

---

ReadWorks’

**If - Comprehension Questions**

Name: _____________________________ Date: ____________

1. What is the second "If" statement in the poem?

A. "If you can keep your head when all about you / Are losing theirs and blaming it on you."
B. "If you can trust yourself when all men doubt you, / But make allowance for their doubting too."
C. "If you can dream—and not make dreams your master."
D. "If you can meet with Triumph and Disaster / And treat those two impostors just the same."

2. The poem begins by describing conditions and ends by describing consequences. In which line does it shift from describing conditions to describing consequences?

A. line 8
B. line 14
C. line 26
D. line 31

3. Read the first stanza of the poem.

Based on lines 5 and 6, what can you conclude about the speaker's values?

A. The speaker values curiosity and creativity.
B. The speaker values patience and honesty.
C. The speaker values good looks and political debates.
D. The speaker values the opinions of other people.

4. Read the last stanza of the poem.

What is the speaker probably urging the addressee to do in lines 29 and 30?

A. The speaker is probably urging the addressee to pay more attention to kings than to common people.
B. The speaker is probably urging the addressee to exercise more often.
C. The speaker is probably urging the addressee to make the most of his time.
D. The speaker is probably urging the addressee to relax and enjoy the moment.

5. What is a theme of this poem?

A. Becoming a grownup takes confidence, determination, and virtue.
B. Most people handle failure better than they handle success.
C. Talking about your problems is the first step toward solving them.
D. People should spend more time in crowds and less time around royalty.

6. Read these lines from the poem:

If you can think—and not make thoughts your aim, 10
If you can meet with Triumph and Disaster
And treat those two imposters just the same:
If you can bear to hear the truth you've spoken
Twisted by knaves to make a trap for fools,
Or watch the things you gave your life to, broken, 15
And stoop and build 'em up with worn-out tools;

To personify means to give human-like characteristics to something that is not human. What does the poet personify in these lines?

A. "thoughts"
B. "Triumph and Disaster"
C. "knaves" and "fools"
D. "tools"
7. Read this stanza from the poem:

If you can make one heap of all your winnings
And risk it on one turn of pitch-and-toss,
And lose, and start again at your beginnings,
And never breathe a word about your loss; To
If you can force your heart and nerve and sinew
To serve your turn long after they are gone,
And so hold on when there is nothing in you
Except the Will which says to them: "Hold on!"

To what does the pronoun “them” refer?
A. “winnings”  
B. “pitch-and-toss”  
C. “beginnings”  
D. “heart and nerve and sinew”

8. What does the speaker declare will be “yours” in line 31?

---

9. Based on the last line of the poem, what can you conclude about who the speaker of this poem is? Support your answer with evidence from the text.

10. What might the speaker’s purpose be? Support your answer with evidence from the text.

---

Introduction to the Atmosphere

This text is from the U.S. National Oceanic and Atmospheric Administration: National Weather Service.

The atmosphere is a cloud of gas and suspended solids extending from the Earth’s surface out many thousands of miles, becoming increasingly thinner with distance but always held by the Earth’s gravitational pull.

The atmosphere surrounds the Earth and holds the air we breathe; it protects us from outer space; and holds moisture (clouds), gases, and tiny particles. In short, the atmosphere is the protective bubble in which we live.

This protective bubble consists of several gases (listed in the table to the right) with the top four making up 99.99% of all gases. Of the dry composition of the atmosphere nitrogen, by far, is the most common. Nitrogen dilutes oxygen and prevents rapid burning at the Earth’s surface. Living things need it to make proteins.

Oxygen is used by all living things and is essential for respiration. It is also necessary for combustion or burning.

Argon is used in light bulbs, in double-pane windows, and used to preserve the original Declaration of Independence and the Constitution. Plants use carbon dioxide to make oxygen. Carbon dioxide also acts as a blanket that prevents the escape of heat into outer space.

These percentages of atmospheric gases are for a completely dry atmosphere. The atmosphere is rarely, if ever, dry. Water vapor (water in a ‘gas’ state) is nearly always present up to about 4% of the total volume.

In the Earth’s desert regions (30°N/30°S) when dry winds are blowing, the water vapor contribution to the composition of the atmosphere will be near zero.

---

Introduction to the Atmosphere

Chemical makeup of the atmosphere including water vapor

<table>
<thead>
<tr>
<th>Water vapor</th>
<th>Nitrogen</th>
<th>Oxygen</th>
<th>Argon</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>78.08%</td>
<td>20.95%</td>
<td>0.95%</td>
</tr>
<tr>
<td>1%</td>
<td>77.33%</td>
<td>20.70%</td>
<td>0.95%</td>
</tr>
<tr>
<td>2%</td>
<td>76.52%</td>
<td>20.53%</td>
<td>0.91%</td>
</tr>
<tr>
<td>3%</td>
<td>75.74%</td>
<td>20.32%</td>
<td>0.90%</td>
</tr>
<tr>
<td>4%</td>
<td>74.96%</td>
<td>20.11%</td>
<td>0.88%</td>
</tr>
</tbody>
</table>

Water vapor contribution climbs to near 3% on extremely hot/humid days. The upper limit, approaching 4%, is found in tropical climates. The table (left) shows the changes in atmospheric composition with the inclusion of different amounts of water vapor.
5. What is the main idea of this text?
A. Earth's atmosphere extends many thousands of miles from Earth's surface, and it is held by Earth's gravitational pull.
B. Nitrogen is the most common gas in Earth's atmosphere, and its function is to dilute oxygen and prevent rapid burning.
C. Water vapor is almost always in Earth's atmosphere, but its contribution to the atmosphere's composite changes.
D. Earth's atmosphere is made of mostly nitrogen, oxygen, argon, carbon dioxide, and water vapor, and it is important for life on Earth.

3. The gas oxygen is necessary for living things. What evidence from the text supports this conclusion?
A. "Nitrogen dilutes oxygen and prevents rapid burning at the Earth's surface."
B. "Oxygen is used by all living things and is essential for respiration."
C. "Plants use carbon dioxide to make oxygen."
D. "Water vapor...is nearly always present up to about 4% of the total volume."

4. Read these sentences from the text.
"The atmosphere surrounds the Earth and holds the air we breathe; it protects us from outer space; and holds moisture (clouds), gases, and tiny particles. In short, the atmosphere is the protective bubble in which we live."

Based on the text, what can you infer about how people can exist on Earth?
A. People can exist on Earth because of its atmosphere.
B. People can exist on Earth because of outer space.
C. People can exist on Earth because of moisture.
D. People can exist on Earth because of tiny particles.
1. What unexpected change did scientists notice in the Hudson River in 2005?
   A. Zooplankton had returned to the same levels as before the zebra mussel invasion.
   B. The total number of zebra mussels in the Hudson River had returned to almost zero.
   C. The zebra mussels in the Hudson River had stopped eating all types of plankton.
   D. The average size of the plankton in the Hudson River was decreasing.

2. What caused the number of zooplankton in the Hudson River to increase?
   A. the decline in the number of phytoplankton
   B. the decline in the number of native mussels and clams
   C. the decline in the number of small zebra mussels
   D. the decline in the number of large zebra mussels

3. Read these sentences from the text.

   "As zooplankton rebounded, so did native mussels and clams. Scientists anticipate some fish species will rebound too as their food supply increases."

What conclusion can you draw about zooplankton based on this evidence?
   A. Zooplankton eat native mussels, clams, and some fish species.
   B. Zooplankton are similar organisms to certain mussels and clams.
   C. Zooplankton are an important food source for native mussels, clams, and fish.
   D. Zooplankton are a more important food source for most species than phytoplankton.

4. What relationship could scientists track in order to see whether or not blue crabs were the main reason that large zebra mussels have declined?
   A. the relationship between the size of zebra mussels and the size of blue crabs over one year
   B. the relationship between the average numbers of large zebra mussels and blue crabs over time
   C. the relationship between the average numbers of blue crabs and phytoplankton over time
   D. the relationship between the size of blue crabs and the size of zooplankton over one year

5. What is the main idea of this text?
   A. The number of large zebra mussels in the Hudson River has gone down in recent years, but scientists predicted that change and are not surprised by it.
   B. The number of small zebra mussels in the Hudson River has unexpectedly gone down in recent years, so scientists have decided to change the focus of their studies on the Hudson River.
   C. The number of zooplankton in the Hudson River has unexpectedly gone up in recent years, so scientists expect the number of zebra mussels to increase as well.
   D. The number of large zebra mussels in the Hudson River has unexpectedly gone down in recent years, but scientists will continue to study the river to understand the invasion's changing impact.

6. Read these sentences from the text.

   "These new effects rippled through the food web. As zooplankton rebounded, so did native mussels and clams. Scientists anticipate some fish species will rebound too as their food supply increases."

What does the author mean by the phrase "rippled through the food web"?
   A. did not impact other parts of the food web
   B. had effects on other parts of the food web
   C. caused harm to other species in the food web
   D. completely changed the relationships in the food web

7. Choose the answer that best completes the sentence.

8. What happened to different living things in the Hudson River ecosystem almost 20 years after the zebra mussel invasion? Make sure to mention the changes in at least three populations in your answer.

9. What does the number of zooplankton in the Hudson River show about the large zebra mussels in the river? Use evidence from the text to support your answer.
Name ____________________________ Date ____________________________

Solving Equations

1. Solve the equation. \(-4 + \frac{x}{5} + 6\)
   A. 50
   B. 10
   C. -10
   D. -50

2. Solve the equation. \(\frac{1}{3}x + 2 = 5\)
   A. -9
   B. 13
   C. 1
   D. 9

3. Solve the equation. \(20 = -d + 6\)
   A. -17
   B. 7
   C. 14
   D. -14

4. Solve the equation. \(7 = \frac{11 + x}{-4}\)
   A. -16
   B. -40
   C. 16
   D. 40

5. Solve the equation. \(5l - 3 + 8l = 58\)
   A. -2
   B. -1
   C. 4
   D. 2

6. Solve the equation. \(4(y - 6) = -4\)
   A. 6
   B. 5
   C. 7
   D. -7

7. Solve the equation. \(\frac{2p}{6} - 19 = -9\)
   A. 35
   B. -84
   C. 30
   D. 23

8. Solve the equation. \(3.9x + 1.4 = 17\)
   A. 1.6
   B. 4
   C. 5
   D. 4.7

9. Solve the equation. \(20.5 = -15.5 - 3.6x + 1.8x\)
   A. -20
   B. -2.7
   C. 6.6
   D. 20

10. Solve the equation. \(\frac{4x}{7} = 0.6 = 3.6\)
    A. -7.35
    B. 2.4
    C. 5.25
    D. 7.35

11. Solve the equation. \(3(0.5y - 6) = 12\)
    A. 4
    B. -4
    C. -20
    D. 20

12. Solve the equation. \(2x - 2 \geq 3(x - 1) - 5(6 - 2x)\)
    A. 31
    B. -31
    C. 11
    D. 11

13. Solve the equation. \(2x - 6 \geq 4x + 6\)
    A. -6
    B. -9
    C. 2
    D. -5

14. Solve the equation. \(9d - 4d - 2d + 8 = -3d\)
    A. 4
    B. 2
    C. 0
    D. -3

15. You are driving to visit a friend in another state who lives 700 miles away. You are driving 65 miles per hour and have already driven 375 miles. Write and solve an equation to find how much longer in hours you must drive to reach your destination.
    A. \(700h - 375 = 65; h = 0.63\)
    B. \(65h + 375 = 700; h = 9\)
    C. \(65h + 375h = 700; h = 1.6\)
    D. \(65h - 375h = 700; h = 16.5\)

16. Steven wants to buy a $530 bicycle. Steven has no money saved, but will be able to deposit $35 into a savings account when he receives his paycheck each Friday. However, before Steven can buy the bike, he must give his sister $65 that he owes her. For how many weeks will Steven need to deposit money into his savings account before he can pay back his sister and buy the bike? The equation represents the scenario: \(35x - 65 = 530\).
    A. 20 weeks
    B. 16 weeks
    C. 17 weeks
    D. 16 weeks

17. Find the value of \(y\). \(-6y + 14 + 4y = 32\)
    A. 18
    B. 1.8
    C. -9
    D. 9
1. Find the length of the unknown side. Round your answer to the nearest tenth.

![Triangle diagram]

A. 20 cm  
B. 400 cm  
C. 10 cm  
D. 29.2 cm

2. Find the area of the smallest side of the right triangle.

![Right triangle diagram]

A. 150 ft²  
B. 144 ft²

3. The length of two sides of a right triangle are leg: 9 m and hypotenuse: 16 m. Find the length of the third side. Round to the nearest tenth if necessary.

![Right triangle diagram]

A. 25.0 m  
B. 13.2 m  
C. 104 m  
D. 14.4 m

4. Find the length of the hypotenuse. Round your answer to the nearest hundredth.

![Right triangle diagram]

A. 11.00  
B. 9.55  
C. 2.36  
D. 3.32

5. The length of two sides of a right triangle are leg: 9 m and hypotenuse: 16 m. Find the length of the third side. Round to the nearest tenth if necessary.

![Right triangle diagram]

A. 25.0 m  
B. 13.2 m  
C. 104 m  
D. 14.4 m

6. Find the following: \( \sqrt[3]{27} \)

A. 21 \( \frac{1}{3} \)  
B. 4  
C. 3  
D. 9

7. Find the length of the unknown side. Round your answer to the nearest tenth.

![Right triangle diagram]

A. 23.3 m  
B. 15 m  
C. 25.6 m  
D. 8 m

8. Find the length of the unknown side. Round your answer to the nearest tenth.

![Right triangle diagram]

A. 12.5 ft  
B. 5 ft  
C. 4.4 ft  
D. 19 ft

9. Must is the catcher for his school's baseball team. The catcher must be able to throw from home plate to second base. What is the distance from home plate to second base?

![Baseball diamond diagram]

A. 90 ft  
B. 227.3 ft  
C. 180 ft  
D. 180.5 ft

10. A rectangular park has been constructed in downtown Lulubul. The designer wants to put a gravel walkway that runs diagonally through the park. The width is 8 m and the length is 66 ft long. What is the length of the walkway?

![Gravel walkway diagram]

A. 23 feet  
B. 13 feet  
C. 19 feet  
D. 7 feet

11. A large pine tree was struck by lightning and fell as shown by the diagram below. Which equation could be used to find the length of the fallen part of the tree?

![Tree diagram]

A. \( \sqrt{13^2 - 6^2} = x \)  
B. \( \frac{13^2 - 6^2}{2} = x \)  
C. \( \frac{13^2 + 6^2}{2} = x \)  
D. \( \sqrt{13^2 + 6^2} = x \)

12. Do the following lengths form a right triangle?

![Right triangle diagram]

A. Yes  
B. No

13. Do the following lengths form a right triangle?

![Right triangle diagram]

A. Yes  
B. No

14. Do the following lengths form a right triangle?

![Right triangle diagram]

A. Yes  
B. No

15. The bottom of a ladder must be placed 4 feet from a wall. The ladder is 12 feet long. How far above the ground does the ladder touch the wall? Round your number to the nearest tenth.

A. 6.6 feet  
B. 11.0 feet  
C. 11.3 feet  
D. 12.8 feet

16. What is the area of the medium square in the figure shown?

![Medium square diagram]

A. 5 square units  
B. 9 square units  
C. 16 square units  
D. 25 square units