UNION COUNTY TEAMS CHARTER SCHOOL

Union County T.E.A.M.S. Charter School and High School/College Leadership Academy
515-517 West 4th Street Plainfield, NJ 07060 908.754.9043 * FAX 908.754.7790

July 2015

SUMMER PACKET LETTER
(Incoming 8th Graders)

Dear Incoming **Eighth Grade** Students and Parents/Guardians,

Happy Summer!!! We trust by now that you are staying cool and enjoying your days off from School. Summer is a great time to relax but it is also a time to read and practice your skills in order to be prepared for the upcoming school year. We have prepared a standards-based Summer Packet with Language Arts and Math activities to support us in decreasing summer learning loss and increase critical thinking.

This Summer Packet is designed to provide 8th grade students with practice for reading comprehension, writing, public speaking and basic math problem solving. **You will have to print the packet out to complete.**

Parents/Guardians may need to offer assistance towards pacing your child for the remainder of July and the month of August with (do **NOT** wait to the last minute):

1. ■Reading the required books
2. ■Completing the reading assignments/activities as per your grade level
3. ■Completing the math assignments as per your grade level

All completing Summer Packets are due on **Monday, September 14, 2015** to your Homeroom Teacher. Your child will receive a grade for the packet.

If you have any questions, please feel free to call the school at 908-754-9043.

Happy Reading, Writing and Problem Solving!!!!

Your Partner in Teaching and Learning,
Brian A. Albanese
Director of Instruction/Principal K-8

REMINDER: FIRST DAY OF SCHOOL IS THURSDAY, SEPTEMBER 3, 2015

UC Teams Charter School
Incoming Grade 8
Summer Reading List 2015

8th Grade

The Maze Runner by James Dashner

The Cay by Theodore Taylor

Summer Reading Assignment Incoming Grade 8
The Cay by Theodore Taylor

Character Development Journal: As you read the novel, complete this three-column note activity to reflect on the development of the character of **Phillip.** In the first column is a list of quotations taken directly from the novel at different points in the story. In the second column, explain the essential idea of the quote in your own words. And finally, in the third column, write the habit shown by character(s) in the novel from The 7 Habits of Highly Effective Teens. **(See the attached worksheet to see a list of The 7 Habits of Highly Effective Teens.)**

EXAMPLE:

Quotation from the Novel (Timothy)	Essential Message of the Quote	Habit Shown
"I true don' know, Phill-eep, but I true tink beneath d'skin is all d'same"	Timothy is explaining that people are all the same inside even if not the same on the outside.	**Seek First to Understand, Then Be Understood**

Quotation from the Novel (Phillip)	Essential Message of the Quote	Habit shown
"I had played there many times with Henrik and the other boys…defending Willemstad against pirates or even the British." Page 11, Chapter 1		
"Then Timothy told me what he could remember from his own childhood. It wasn't at all like mine. He'd never gone to school, and was working on a fishing boat since ten." Pages 74-75, Chapter 10		
"I was starting to be less dependent on the vine rope…Timothy was trying hard to make me independent of him…leaving me alone on the cay." Page 81, Chapter 11		
"For more than a week, I knew…he was making the hooks for me." Page 94, Chapter 13		
"I dropped the hook and sinker overboard. In a moment…then take the hook out." Page 96, Chapter 13		
"I realized then why he had to use our rope sparingly…Everyday I learned of something new that Timothy had done so we could survive." Page 103, Chapter 14		
"There was so much to do I hardly knew where to start…I accomplished a lot in three days, even putting a new edge on Timothy's knife by honing it on coral." Page 116, Chapter 16		

**** These activities will be turned in to your Language Arts teacher during the first week of school! ****

Name_____

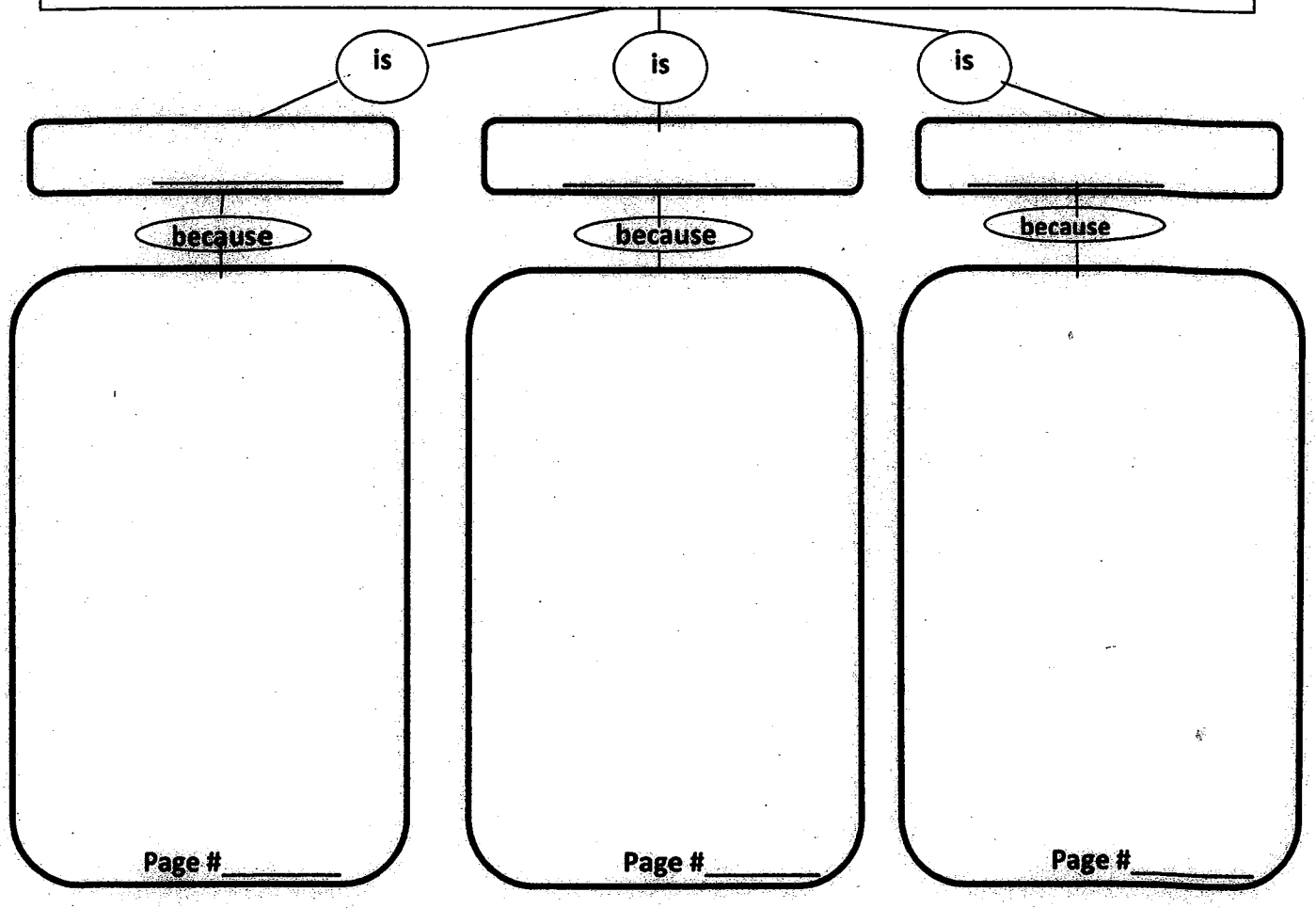
Summer Reading Assignment Incoming Grade 8

Maze Runner by James Dashner

1. Choose three characters to follow throughout the novel. Create a character analysis for each of the characters. You must include a physical description, a description of their job in the Glade, a description of their personality and a summary of their adventures in the Glade. You can choose from: Thomas, Alby, Newt, Gally, Minho, Chuck, Ben and Teresa. Then pick one character and fill out the graphic below.

Write the name of one character in *Maze Runner* in this box. Then write three traits the characters possesses in the middle three boxes. In the bottom boxes, write examples from the book of the character demonstrating each of the three traits. Your examples should include quotes from the text.

Character _____



2. Friendship, persistence, death and bravery are four themes or big ideas that carry throughout the novel. Choose the theme that you feel is the most important and create a collage for that theme. You must include quotes from the novel (at least 10) and pictures. The pictures can be drawn, cut from magazines or printed. Be ready to discuss these themes during the first month of school.
   Minimum Size: 8 ½" by 11"

3. There are many unique words **created by the Gladers** to be able to talk about the strange creatures and happenings in their world. Create a "Glader Dictionary" that could be used by newcomers to the Glade to help them understand life there and to better survive in their dangerous new world. It should include a cover and at least 20 Glader words listed alphabetically with their definition.

1. Rank these three big ideas/essential messages in order of importance and explain why you chose that ranking.

_____ Inequality

_____ Violence

_____ Change

2. State other ideas present in *The Cay*.

3. What do you think is the most important line of *The Cay*?

4. What is the most confusing line of *The Cay*?

5. Create a visual representation of the theme of the book. This could be an important place in the story or a new cover that captures the main idea of the book.

Decimal Operations

Hints/Guide:

When adding and subtracting decimals, the key is to line up the decimals above each other, add zeros so all of the numbers have the same place value length, then use the same rules as adding and subtracting whole numbers, with the answer having a decimal point in line with the problem. For example:

$$\begin{array}{rrr} & 34.5 & 34.500 \\ 34.5 + 6.72 + 9.045 = & 6.72 & = 6.720 \\ & \underline{+\ 9.045} & \underline{+ 9.045} \\ & & 50.265 \end{array}$$

AND

$$\begin{array}{rr} 5 - 3.25 = & 5.00 \\ & \underline{-\ 3.25} \\ & 1.75 \end{array}$$

To multiply decimals, the rules are the same as with multiplying whole numbers, until the product is determined and the decimal point must be located. The decimal point is placed the same number of digits in from the right of the product as the number of decimal place values in the numbers being multiplied. For example:

8.54 x 17.2, since 854 x 172 = 146888, then we count the number of decimal places in the numbers being multiplied, which is three, so the final product is 146.888 (the decimal point comes three places in from the right).

To divide decimals by a whole number, the process of division is the same, but the decimal point is brought straight up from the dividend into the quotient. For example:

$$\begin{array}{r} 17.02 \\ 3 \overline{)\ 51.06} \end{array}$$

The decimal point moves straight up from the dividend to the quotient.

Exercises: Solve: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. 15.709 + 2.34 + 105.06 =

2. 64.038 + 164.18 + 1005.7 =

3. 87.4 - 56.09 =

4. 500.908 - 4.72 =

5. 6108.09 - 2004.704 =

6. 9055.3 - 242.007 =

7. $\begin{array}{r} 63 \\ \times\ .04 \end{array}$

8. $\begin{array}{r} .87 \\ \times\ .23 \end{array}$

9. $\begin{array}{r} 8.904 \\ \times\ 2.1 \end{array}$

10. $\begin{array}{r} 4.2 \\ \times\ .602 \end{array}$

11. $35\overline{)70.35}$

12. $14\overline{)50.512}$

13. $23\overline{)74.888}$

Rename Fractions, Percents, and Decimals

Hints/Guide:

To convert fractions into decimals, we start with a fraction, such as $\frac{3}{5}$, and divide the numerator (the top number of a fraction) by the denominator (the bottom number of a fraction). So:

$$\begin{array}{r} 0.6 \\ 5 \overline{)\,3.0} \\ -\,30 \\ \hline 0 \end{array}$$ and the fraction $\frac{3}{5}$ is equivalent to the decimal 0.6

To convert a decimal to a percent, we multiply the decimal by 100 (percent means a ratio of a number compared to 100). A short-cut is sometimes used of moving the decimal point two places to the right (which is equivalent to multiplying a decimal by 100, so 0.6 x 100 = 60 and $\frac{3}{5} = 0.6 = 60\%$

To convert a percent to a decimal, we divide the percent by 100, $60\% \div 100 = 0.6$ so $60\% = 0.6$

To convert a fraction into a percent, we can use a proportion to solve,

$$\frac{3}{5} = \frac{x}{100}, \text{ so } 5x = 300 \text{ which means that } x = 60 = 60\%$$

Exercises: Complete the chart:

	Fraction	Decimal	Percent
1		0.04	
2			125%
3	$\frac{2}{3}$		
4		1.7	
5			0.6%
6	$3\frac{1}{2}$		
7		0.9	
8			70%
9	$\frac{17}{25}$		
10		0.007	

Add and Subtract Mixed Numbers

Hints/Guide: (SKIP THIS PAGE IT IS OUT OF ALIGNMENT)

When adding and subtracting mixed numbers, we add the whole numbers and the fractions separately, then simplify the answer. For example:

$$4\frac{1}{3} = 4\frac{8}{24}$$
$$+\,2\frac{6}{8} = 2\frac{18}{24}$$
$$6\frac{26}{24} = 6 + 1\frac{2}{24} = 7\frac{2}{24} = 7\frac{1}{12}$$

$$7\frac{3}{4} = 7\frac{18}{24}$$
$$-\,2\frac{15}{24} = 2\frac{15}{24}$$
$$5\frac{3}{24} = 5\frac{1}{8}$$

First, we convert the fractions to have the same denominator, then add the fractions and add the whole numbers. If needed, we then simplify the answer.

Exercises: Solve in lowest terms: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. $3\frac{1}{2} + 5\frac{3}{5}$

2. $6\frac{17}{25} + 8\frac{4}{7}$

3. $6\frac{2}{3} + 9\frac{7}{9}$

4. $3\frac{4}{5} + \frac{3}{11}$

5. $4\frac{3}{7} + 2\frac{1}{2}$

6. $3\frac{6}{7} + 3\frac{11}{15}$

Multiply and Divide Mixed Numbers

Hints/Guide:

To multiply mixed numbers, we first convert the mixed numbers into improper fractions. This is done by multiplying the denominator by the whole number part of the mixed number and then adding the numerator to this product, and this is the numerator of the improper fraction. The denominator of the improper fraction is the same as the denominator of the mixed number. For example:

$$3\frac{2}{5} \text{ leads to } 3\bullet 5+2=17 \text{ so } 3\frac{2}{5}=\frac{17}{5}$$

Once the mixed numbers are converted into improper fractions, we multiply and simplify just as with regular fractions. For example:

$$5\frac{1}{5}\bullet 3\frac{1}{2}=\frac{26}{5}\bullet\frac{7}{2}=\frac{182}{10}=18\frac{2}{10}=18\frac{1}{5}$$

Exercises: Solve and place your answer in lowest terms: No Calculators!
SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. $6\frac{2}{3}\bullet 7\frac{3}{7}=$
2. $3\frac{1}{3}\bullet 6\frac{4}{5}=$
3. $7\frac{1}{8}\bullet 6=$
4. $4\frac{3}{4}\bullet 1\frac{1}{5}=$
5. $7\bullet 4\frac{2}{3}=$
6. $4\frac{1}{3}\bullet\frac{8}{9}=$

Hints/Guide:

To divide mixed numbers, we must first convert to improper fractions using the technique shown in multiplying mixed numbers. Once we have converted to improper fractions, the process is the same as dividing regular fractions. For example:

$$2\frac{1}{2}\div 3\frac{1}{3}=\frac{5}{2}\div\frac{10}{3}=\frac{5}{2}\bullet\frac{3}{10}=\frac{15}{20}=\frac{3}{4} \qquad 3\frac{1}{2}\div 8\frac{2}{3}=\frac{7}{2}\div\frac{26}{3}=\frac{7}{2}\bullet\frac{3}{26}=\frac{21}{52}$$

Exercises: Solve and place your answer in lowest terms: No Calculators!
SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. $1\frac{1}{5}\div 4\frac{2}{5}=$
2. $4\frac{4}{7}\div\frac{4}{9}=$
3. $-\div 2\frac{8}{9}=\frac{3}{5}$
4. $4\frac{1}{4}\div\frac{5}{7}=$
5. $3\frac{2}{3}\div 4\frac{3}{7}=$
6. $-\div 2\frac{3}{11}=\frac{3}{4}$

Integers I

Hints/Guide:

To add integers with the same sign (both positive or both negative), add their absolute values and use the same sign as the addends. To add integers of opposite signs, find the difference of their absolute values and then take the sign of the larger absolute value.

To subtract integers, add the opposite of the second addend. For example,
$6 - 11 = 6 + -11 = -5$

Exercises: Solve the following problems:

1. $(-4) + (-5) =$
2. $-9 - (-2) =$
3. $6 + (-9) =$
4. $(-6) - 7 =$
5. $7 - (-9) =$
6. $15 - 24 =$
7. $(-5) + (-8) =$
8. $-15 + 8 - 8 =$
9. $14 + (-4) - 8 =$
10. $14.5 - 29 =$
11. $-7 - 6.85 =$
12. $-8.4 - (-19.5) =$
13. $29 - 16 + (-5) =$
14. $-15 + 8 - (-19.7) =$
15. $45.6 - (-13.5) + (-14) =$
16. $-15.98 - 6.08 - 9 =$
17. $-7.24 + (-6.8) - 7.3 =$
18. $29.45 - 56.009 - 78.2 =$
19. $17.002 + (-7) - (-5.23) =$
20. $45.9 - (-9.2) + 5 =$

Integers II

Hints/Guide:

The rules for multiplying integers are:

Positive x Positive = Positive
Positive x Negative = Negative
Negative x Negative = Positive
Negative x Positive = Negative

The rules for dividing integers are the same as multiplying integers.

Exercises: Solve the following problems:

1. $4 \cdot (-3) \cdot 6 =$
2. $5(-12) \cdot (-4) =$
3. $(4)(-2)(-3) =$
4. $\frac{(-5)(-6)}{-2} =$
5. $\frac{6(-4)}{8} =$
6. $\frac{-56}{2^3} =$
7. $6\,(-5 - (-6)) =$
8. $8\,(-4 - 6) =$
9. $-6\,(9 - 11) =$
10. $\frac{-14}{2} + 7 =$
11. $8 - \frac{-15}{-3} =$
12. $-3 + \frac{-12 \cdot -5}{4} =$
13. $\frac{-6-(-8)}{-2} =$
14. $-7 + \frac{4+(-6)}{-2} =$
15. $45 - 14\,(5 - (-3)) =$
16. $(-4 + 7)\,(-16 + 3) =$
17. $16 - (-13)\,(-7 + 5) =$
18. $\frac{4+(-6)-5-3}{-6+4} =$
19. $(-2)^3(-5-(-6)) =$
20. $13\,(-9 + 17) + 24 =$

Solving Equations I

Hints/Guide:

The key in equation solving is to isolate the variable, to get the letter by itself. In one-step equations, we merely undo the operation - addition is the opposite of subtraction and multiplication is the opposite of division. Remember the golden rule of equation solving: If we do something to one side of the equation, we must do the exact same thing to the other side. Examples:

1. $x + 5 = 6$
   $-5 \quad -5$
   $x = 1$
   Check: $1 + 5 = 6$
   $6 = 6$

2. $t - 6 = 7$
   $+6 \quad +6$
   $t = 13$
   Check: $13 - 6 = 7$
   $7 = 7$

3. $\frac{4x}{4} = \frac{16}{4}$
   $x = 4$
   Check: $4\,(4) = 16$
   $16 = 16$

4. $6 \cdot \frac{r}{6} = 12 \cdot 6$
   $r = 72$
   Check: $72 \div 6 = 12$
   $12 = 12$

Exercises: Solve the following problems: No Calculators!
SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. $x + 8 = -13$
2. $t - (-9) = 4$
3. $-4t = -12$
4. $\frac{r}{4} = 24$
5. $y - 4 = -3$
6. $h + 8 = -5$
7. $\frac{p}{8} = -16$
8. $-5k = 20$
9. $-9 - p = 17$

Solving Equations II

Hints/Guide:

The key in equation solving is to isolate the variable, to get the letter by itself. In two-step equations, we must undo addition and subtraction first, then multiplication and division. Remember the golden rule of equation solving: If we do something to one side of the equation, we must do the exact same thing to the other side. Examples:

1. $4x - 6 = -14$

$+6 \quad +6$

$\frac{4x}{4} = \frac{-8}{4}$

$x = -2$

Solve: $4(-2) - 6 = -14$

$-8 - 6 = -14$

$-14 = -14$

2. $\frac{x}{-6} - 4 = -8$

$+4 \quad +4$

$-6 \cdot \frac{x}{-6} = -4 \cdot -6$

$x = 24$

Solve: $(24/-6) - 4 = -8$

$-4 - 4 = -8$

$-8 = -8$

Exercises: Solve the following problems: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. $-4t - 6 = 22$
2. $\frac{m}{-5} + 6 = -4$
3. $-4r + 5 = -25$
4. $\frac{x}{-3} + (-7) = 6$
5. $5g + (-3) = -12$
6. $\frac{y}{-2} + (-4) = 8$

Inequalities

Hints/Guide:

In solving inequalities, the solution process is very similar to solving equalities. The goal is still to isolate the variable, to get the letter by itself. However, the one difference between equations and inequalities is that when solving inequalities, when we multiply or divide by a negative number, we must change the direction of the inequality. Also, since an inequality as many solutions, we can represent the solution of an inequality by a set of numbers or by the numbers on a number line.

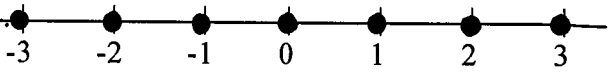
Inequality- a statement containing one of the following symbols:

$<$ is less than $>$ is greater than $\leq$ is less than or equal to

$\geq$ is greater than or equal to $\neq$ is not equal to

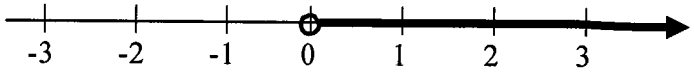
Examples:

1. Integers between -4 and 4.



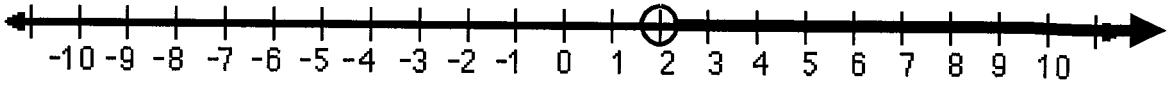
2. All numbers between -4 and 4

3. The positive numbers.



So, to solve the inequality $-4x < -8$ becomes $\frac{-4x}{-4} < \frac{-8}{-4}$

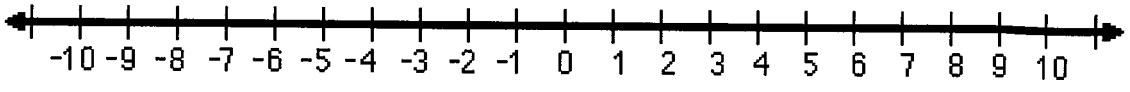
and therefore $x > 2$ is the solution (this is because whenever we multiply or divide an inequality by a negative number, the direction of the inequality must change) and can be represented as:



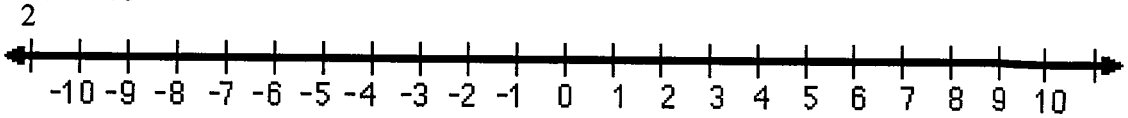
Exercises: Solve the following problems: No Calculators!

1. $4x > 9$

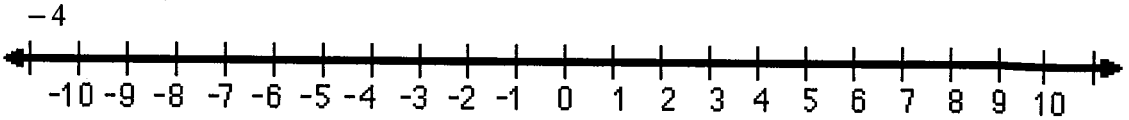
2. $-5t \geq -15$



3. $\frac{x}{2} \geq 3$



4. $\frac{x}{-4} > 2$



Volume

Hints/Guide:

To find the volume of prisms (a solid figure whose ends are parallel and the same size and shape and whose sides are parallelograms) and cylinders, we multiply the area of the base times the height of the figure. The formulas we need to know are:

The area of a circle is $A = n r^2$

The area of a rectangle is $A = bh$

The area of a triangle is $A = \frac{1}{2} b h$

The volume of a prism is

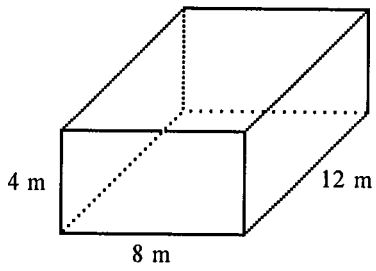
$V = (\text{Area of Base}) \bullet (\text{Height})$

So, the volume of a rectangular prism can be determined if we can find the area of the base and the perpendicular height of the figure.

Exercises: Find the volume of the following figures: Note: Use $n = 3.14$

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1.



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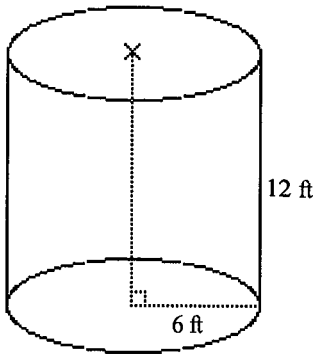

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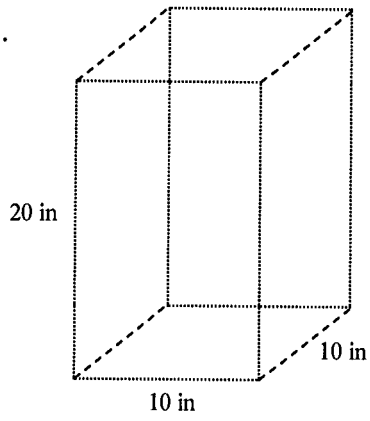

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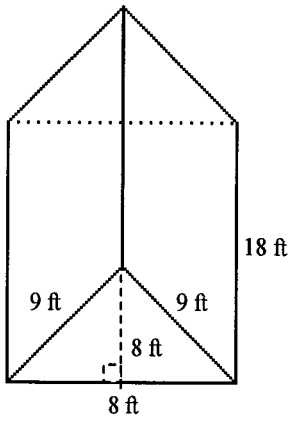
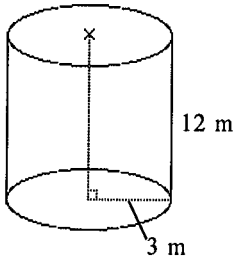


Surface Area

Hints/Guide:

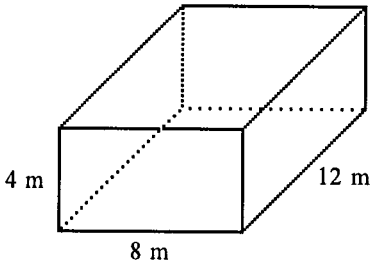
To determine the surface area of an object, we must find the areas of each surface and add them together. For a rectangular prism, we find the area of each rectangle and then add them together. For a cylinder, we find the area of each base and the n add the area of the rectangle (the circumference of the circular base times the height) which wraps around to create the sides of the cylinder. For example:



The area of each base is $A = pr^2 = 3.14 \cdot 3 \cdot 3 = 28.26\ m^2$
and the area of the cylinder "wrap" is
$A = 2prh$ (which is the circumference of the circle times the height of the cylinder)
$= 2 \cdot 3.14 \cdot 3 \cdot 12$
$= 226.08$
So the surface area is $28.26 + 28.26 + 226.08 = 282.6\ m^2$

Exercises: Determine the surface area of the following figures:
SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1.



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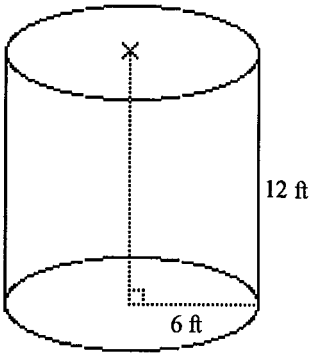

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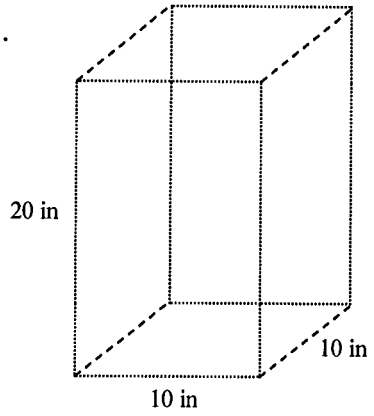
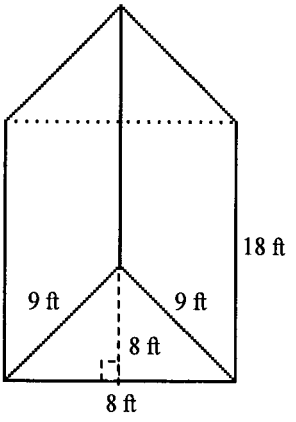


4.



Geometry I

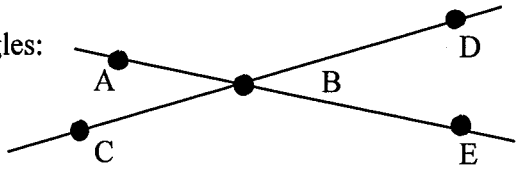
Hints/Guide:

In order to learn geometry, we first must understand so geometric terms:

Right Angle - an angle that measures 90 degrees.
Acute Angle - an angle that measures less than 90 degrees.
Obtuse Angle - an angle that measures more than 90 degrees, but less than 180 degrees.
Complementary - two angles that add together to equal 90 degrees.
Supplementary - two angles that add together to equal 180 degrees.
Vertical - Angles which are opposite from each other.
Adjacent - angles that are next to each other.

When two lines intersect, they form four angles:

$\angle ABC$ $\angle ABD$
$\angle DBE$ $\angle EBC$



Vertical angles, such as $\angle ABC$ and $\angle DBE$, are equal in measure and adjacent angles, such as $\angle ABD$ and $\angle DBE$, are supplementary.

Exercises:

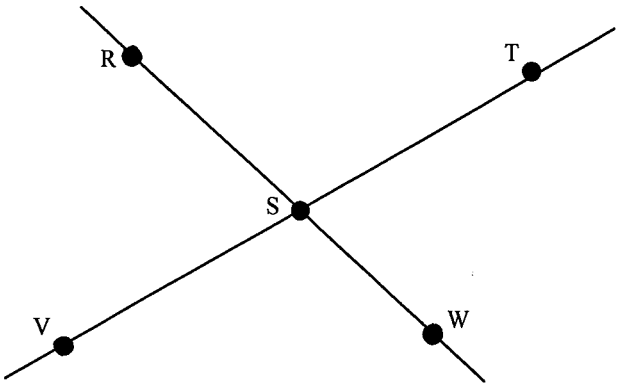
1. In the above example, list two acute angles and two obtuse angles

   Acute_____,_____ Obtuse_____, _____

2. If you have a 43° angle, what is the measure of the angle which is complementary to it?

3. If you have a 43° angle, what is the measure of the angle which is supplementary to it?

4. Using the figure, list two pairs of vertical angles and two pairs of adjacent angles.



Geometry II

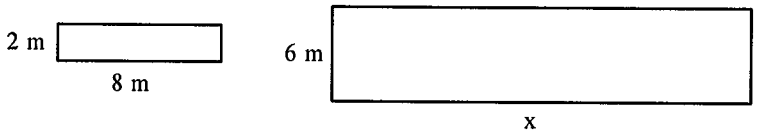
Hints/Guide:

In order to add to our knowledge of geometry, here are some additional terms:

Congruent - two figures which are the same shape and the same size.

Similar - two figures which are the same shape but different size.

In similar triangles, congruent angles in the same location in the figure are called corresponding angles. The sides opposite corresponding angles are called corresponding sides. The measures of corresponding angle or of corresponding sides of similar triangles are proportional. For example:

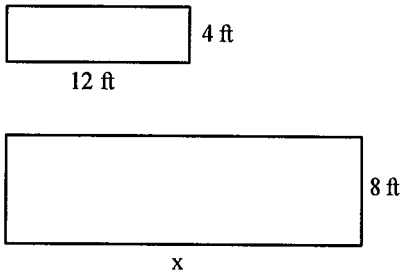


$\frac{2}{6} = \frac{8}{x}$ so since $2x = 48$

$x = 24$ m

Exercises: Solve for the indicated variables (All figures are similar):

1.



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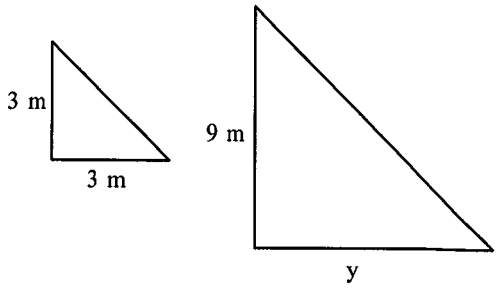

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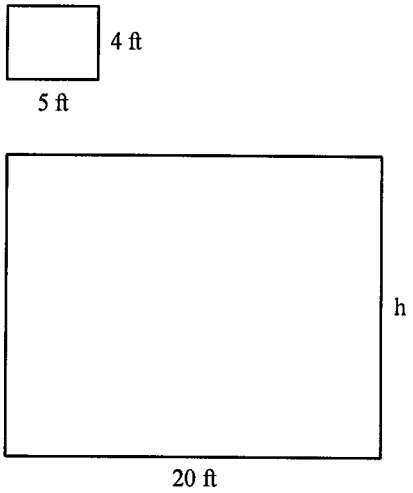

4.