

Dear Future 7th Graders,

Wow! Doesn't that sound great! I hope your 7th grade year will be the best year yet at Ascension.

I am sending you a summer math packet. While completing this is not mandatory, it is strongly encouraged. I know that there will be some days when you are looking for something exciting to do – and here it is!

This math packet reviews most of the concepts you covered in 6th grade. We will go over the answers and review the problems the first week of school. In the second week of school we will have a quiz over all the material. So, you might want to wait closer to the beginning of the school year to do the packet.

I am looking forward to having you in 7th grade pre-algebra. Have a great summer.

Mrs. Gross

THINGS YOU SHOULD KNOW:

Conversions:

100 centimeters = 1 meter

12 inches = 1 foot

3 feet = 1 yard

8 ounces = 1 cup

2 cups = 1 pint

2 pints = 1 quart

4 quarts = 1 gallon

Formulas:

Area of squares and

rectangles : $A = l \cdot w$

Volume of rectangular

prisms : $V = l \cdot w \cdot h$

Order of Operations:

P : Parenthesis

E : Exponents

MD : Multiplication OR

Division (from left to right)

AS : Addition OR

Subtraction (from left to right)

Fractions:

To find a common denominator, find the least common multiple of the denominators in the problem.

Decimals:

Line up decimals when adding and subtracting.

Count decimal places when multiplying.



WRITING EXPRESSIONS

Write an expression to represent each verbal phrase.

Subtract 9 and 2, then multiply by 4.	Divide 8 by 2 and then add 1.	Triple 4 and then add 6.
Add 2 and 8 and then multiply by 2.	Double 6 and then divide by 3.	Add 4, 6 and 13.
Subtract 9 and 2 and add 5.	4 plus the product of 2 and 7.	The sum of 6 times 5 and 9 minus 2.
8 less than the quotient of 20 and 5.	The product of 4 and triple the number 2.	Multiply 5 and 7 and then divide by 5.
The difference of four times four and six.	4 more than the difference of 10 and 2.	20 divided by the product of 2 and 4.

WRITING EXPRESSIONS

Write an expression to represent each real world situation. Don't solve!



<p>You pay \$1.25 per pound for 3 pounds of apples.</p>	<p>Emma weighs 38 pounds. Gavin weighs 10 pounds less.</p>	<p>Four friends split a \$20 dinner bill.</p>
<p>There are 15 kids on a bus. 6 more get on.</p>	<p>You have \$13 on a gift card and spend \$9.50.</p>	<p>It takes 100 days to build a house. 3 weeks have passed.</p>
<p>You buy 5 DVDs for \$15 each.</p>	<p>Bill used a \$10 bill to pay for a \$4.65 cup of coffee.</p>	<p>Nina left a \$12 tip on a \$42.60 lunch bill.</p>
<p>There were 325 students in 6th grade last year. There are 40 less this year.</p>	<p>A soccer team raised \$4,250 for charity last year. This year they raised \$575 more.</p>	<p>Tim pays a moving company \$50 per hour. They help him move for 9 hours.</p>

SEQUENCES OF NUMBERS



<p>Use the rule "add 2" to create a sequence of 5 numbers starting with 8</p>	<p>Use the rule "subtract 2" to create sequence of 5 number starting with 8.</p>
<p>Use the rule "divide by 2" to create a sequence of 4 numbers starting with 40.</p>	<p>Use the rule "add 6" to create a sequence of 6 numbers starting with 14.</p>
<p>Use the rule "subtract 9" to create a sequence of 4 numbers starting with 50.</p>	<p>Use the rule "times 2" to create a sequence of 5 numbers starting with 3.</p>
<p>Use the rule "divide by 5" to create a sequence of 3 numbers starting with 50.</p>	<p>Use the rule "subtract 6" to create a sequence of 6 numbers starting with 100.</p>
<p>Use the rule "times 3" to create a sequence of 3 numbers starting with 2.</p>	<p>Use the rule "add 4" to create a sequence of 5 numbers starting with 11.</p>



PLACE VALUE



<p>What is the difference in the value of the 2 in each number below? 832 and 299</p>	<p>What is the difference in the value of the 5 in each number below? 5,934 and 587</p>	<p>Explain the relationship between the 9 in the ones place and 9 in the thousands place in the number 9,999.</p>
<p>Explain the relationship between the 5 in the ones place and the 5 in the tens place in the number 55.</p>	<p>Explain the relationship between the 7 in the hundreds place and the 7 in the ones place in the number 707.</p>	<p>What is the value of the underlined digit? 46.9<u>6</u>5</p>
<p>What is the value of the underlined digit? 1,4<u>2</u>5.86</p>	<p>What is the value of the underlined digit? 3<u>2</u>,962.8</p>	<p>What is the difference in the value of the 6 in each number below? 465 and 2,697</p>
<p>What is the value of the underlined digit? 3,4<u>8</u>6.77</p>	<p>What is the value of the underlined digit? 899.3<u>5</u>4</p>	<p>Explain the relationship between the 4 in the tenths place and the 4 in the tens place in the number 42.4.</p>
<p>Explain the relationship between the 8 in the thousands place and the 8 in the tens place in the number 8,084.</p>	<p>What is the value of the underlined digit? <u>5</u>,924.87</p>	<p>What is the difference in the value of the 7 in each number below? 7,629 and 500.75</p>

▶▶▶▶▶ POWERS OF TEN ◀◀◀◀◀

<p>What is the relationship between the exponent in $4.3 \cdot 10^3$ and 4,300?</p>	<p>What is the relationship between the exponent in $8.2 \div 10^2$ and 0.082?</p>	<p>What is the relationship between the exponent in $5 \cdot 10^6$ and 5,000,000?</p>
<p>Complete the pattern:</p> <p>$4.2 \cdot 10 = 4.2 \cdot 10^{\square} = \underline{\hspace{2cm}}$</p> <p>$4.2 \cdot 10 \cdot 10 = 4.2 \cdot 10^{\square} = \underline{\hspace{2cm}}$</p> <p>$4.2 \cdot 10 \cdot 10 \cdot 10 = 4.2 \cdot 10^{\square} = \underline{\hspace{2cm}}$</p>		<p>Is the multiplication sentence below true? Explain.</p> <p style="text-align: center;">$5.3 \cdot 10^4 = 530,000$</p>
<p>If $6 \cdot 3 = 18$, then $600 \cdot 3 = ?$</p>	<p>$53.2 \cdot \underline{\hspace{1cm}} = 532,000$</p>	<p>If $400 \cdot 5 = 2,000$, then $400 \cdot 500 = ?$</p>
<p>Solve: $7.95 \cdot 10^3$</p>	<p>Solve: $6,000,000 \div 10^3$</p>	<p>Solve: $4.02 \cdot 10^2$</p>
<p>Solve: $7.95 \div 10^3$</p>	<p>Solve: $6,000,000 \cdot 10^3$</p>	<p>If $4 \cdot 2 = 2,000$, then $2,000 \cdot 40 = ?$</p>

COMPARE & ORDER DECIMALS



Use $<$, $>$, or $=$ to compare the two numbers. 4.5 ____ 4.420	Use $<$, $>$, or $=$ to compare the two numbers. 0.67 ____ 0.8	Use $<$, $>$, or $=$ to compare the two numbers. 0.125 ____ 0.2
Use $<$, $>$, or $=$ to compare the two numbers. 0.82 ____ 0.820	Use $<$, $>$, or $=$ to compare the two numbers. 62.4 ____ 6.24	Use $<$, $>$, or $=$ to compare the two numbers. 5.23 ____ 5.3
Put the following the numbers in order from least to greatest. $0.3, 0.13, 0.32, 0.303$	Put the following the numbers in order from least to greatest. $8.2, 0.82, 0.8, 0.08$	Use $<$, $>$, or $=$ to compare the two numbers. 9.62 ____ 9.504
Put the following the numbers in order from greatest to least. $24.4, 24.54, 24.304, 24.24$	Put the following the numbers in order from greatest to least. $6.05, 6.007, 6.5, 6.25$	Use $<$, $>$, or $=$ to compare the two numbers. 1.324 ____ 1.42
Put the following the numbers in order from greatest to least. $0.2, 0.02, 0.22, 0.022$	Put the following the numbers in order from greatest to least. $5.14, 5.4, 5.04, 5.1, 5.41$	Put the following the numbers in order from least to greatest. $2.96, 2.9, 2.609, 2.906, 2.6$

▶▶▶▶ ROUNDING DECIMALS ◀◀◀◀

Round 15.435 to the nearest tenth.	Round 567.065 to the nearest hundredth.	Round 874.32 to the nearest ten.
Round 4.623 to the nearest whole number.	Round 0.7845 to the nearest hundredth.	Round 71.963 to the nearest tenth.
Round 6.8245 to the nearest tenth.	Round 182.675 to the nearest hundred.	Round 42.96 to the nearest ten.
Round 18.096 to the nearest whole number.	Round 14.6734 to the nearest hundredth.	Round 28.946 to the nearest tenth.
Round 104.642 to the nearest tenth.	Round 13.811 to the nearest whole number.	Round 23.462 to the nearest hundredth.

MULTI-DIGIT MULTIPLICATION

Find each product.

$452 \cdot 82$

$5,212 \cdot 40$

$326 \cdot 30$

$182 \cdot 63$

$948 \cdot 45$

$415 \cdot 12$

$1,255 \cdot 81$

$4,124 \cdot 22$

$1,800 \cdot 45$

A box contains 32 candy bars. How many candy bars would be in a shipment of 563 boxes?

A stadium has 1,200 rows of seats. Each row has 82 seats. How many people can fit in the stadium?

164 books were sold in a book store today. If the same number were sold each day, how many books would be sold after 24 days?

MULTI-DIGIT DIVISION

Find each quotient.

$186 \div 62$	$525 \div 15$	$896 \div 14$
$288 \div 32$	$688 \div 86$	$156 \div 12$
$1,232 \div 14$	$540 \div 20$	$720 \div 48$
A bag of candy contains 24 pieces. How many bags are needed for a school of 864 students if each student receives one piece?		A theater has rows of 32 seats. How many rows are needed if 960 people attend a performance at the theater?
Construction paper comes 16 sheets per pack. How many packs need to be purchase in order to get 224 pieces?		



ADDING DECIMALS



Find each sum.

$13.2 + 6.84$	$19.12 + 0.45$	$9.326 + 1.42$	$20.6 + 320.86$
$12.89 + 4$	$5.032 + 9.6$	$15.5 + 3.04$	$16.32 + 19.404$
<p>You buy 2.67 pounds of apples and 4.9 pounds of oranges. How many pounds of fruit did you buy?</p>	<p>Emma grew 2.6 inches last summer and 1.89 during the school year. How much did she grow over the last year?</p>		
<p>Gina has three rolls of ribbon. One roll has 12.6 inches, the second has 18.24 inches long and the last has 19.05 inches of ribbon. How much ribbon does she have?</p>	<p>Mark ran 5.23 miles yesterday, 6.4 miles today and will run 2.14 miles tomorrow. How far will he run over the three days?</p>		

SUBTRACTING DECIMALS

Find each difference.

$15.2 - 6.25$	$9.35 - 0.6$	$10.362 - 1.2$	$30.5 - 3.23$
$12.9 - 8.2$	$8 - 0.25$	$15.5 - 3$	$16.32 - 8.1$
Your lunch bill is \$13.14. A friend pays \$6.99. How much is left to pay?	You cut a 2.675 foot section from an 8.9 foot piece of wood. How much is left?		
Ryan bought 5.67 pounds of candy and ate 2.9 pounds. How much is left?	Travis has a \$20 gift card. He spent \$9.62 and then another \$2.49. How much is left on the gift card?		

▶▶▶ MULTIPLYING DECIMALS ◀◀◀

Find each product.

$3.2 \cdot 4.6$	$8.9 \cdot 4.1$	$6.2 \cdot 3.9$	$8.2 \cdot 0.4$
$6.12 \cdot 4.3$	$9.86 \cdot 0.2$	$4.32 \cdot 0.15$	$62.3 \cdot 1.4$
$5.82 \cdot 1.6$	$13.45 \cdot 2.2$	$20.04 \cdot 8.4$	$50.4 \cdot 0.22$
Veronica ran 2.5 times around a 4.62 mile course. How far did she run?	A car drove 5 times around a 3.67 mile track. How far did it travel?		

▶▶▶▶▶ DIVIDING DECIMALS ◀◀◀◀◀

Find each quotient.

$13.2 \div 6$	$9.4 \div 2$	$8.3 \div 5$	$29.2 \div 4$
$25.2 \div 5$	$6.4 \div 8$	$10.35 \div 9$	$30.4 \div 8$
A 32.34 inch piece of ribbon is cut into 6 pieces. How long is each piece?		A 14.24 pound bag of cheese is split among 5 pizzas. How much cheese is on each pizza?	
An 8.2 pound bag of candy is shared equally among 10 teachers. How much candy did each teacher get?		A 6.5 foot long piece of wood is cut into 5 sections. How long is each section?	

▶▶▶▶ ADDING FRACTIONS ◀◀◀◀

Find each sum.

$$\frac{1}{2} + 6\frac{2}{3}$$

$$\frac{5}{8} + 2$$

$$\frac{9}{10} + 3\frac{1}{2}$$

$$4\frac{1}{5} + 6\frac{1}{2}$$

$$3\frac{1}{4} + 4\frac{1}{2}$$

$$9\frac{1}{3} + 4\frac{5}{6}$$

$$\frac{11}{12} + \frac{3}{4}$$

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

Jake ran $3\frac{1}{2}$ miles Saturday and $4\frac{5}{6}$ miles Sunday. How far did he run over the weekend?

Three sixth grade classes had a pizza party. They ate $4\frac{3}{4}$, $5\frac{1}{6}$ and $6\frac{3}{8}$ pizzas.

SUBTRACTING FRACTIONS

Find each difference.

$$8\frac{1}{2} - 4\frac{1}{5}$$

$$6\frac{3}{4} - 2\frac{1}{8}$$

$$5\frac{3}{5} - 1\frac{1}{3}$$

$$10\frac{4}{5} - 3\frac{1}{2}$$

$$9\frac{7}{8} - \frac{2}{3}$$

$$15\frac{9}{10} - 4\frac{5}{8}$$

$$8\frac{2}{3} - 5\frac{1}{5}$$

$$4\frac{5}{6} - 1\frac{1}{8}$$

You cut a $2\frac{1}{3}$ foot section from an $8\frac{1}{2}$ piece of wood. How much is left?

Wayne ran $3\frac{1}{2}$ miles out of a $9\frac{2}{3}$ mile race. How much further does he have left to run?

MULTIPLYING FRACTIONS

Find each product.

$$\frac{2}{5} \cdot \frac{7}{10}$$

$$\frac{2}{3} \cdot 8$$

$$\frac{5}{6} \cdot \frac{1}{2}$$

$$10 \cdot \frac{4}{5}$$

$$3\frac{1}{2} \cdot 4$$

$$6\frac{1}{8} \cdot 2\frac{1}{2}$$

$$4\frac{2}{3} \cdot 6\frac{1}{4}$$

$$5\frac{1}{2} \cdot 5\frac{1}{2}$$

$$8\frac{1}{3} \cdot 2\frac{1}{4}$$

$$3\frac{3}{5} \cdot 6\frac{1}{5}$$

$$9\frac{1}{2} \cdot 1\frac{7}{10}$$

$$8 \cdot 2\frac{1}{2}$$

You ran $4\frac{1}{2}$ times around a $2\frac{1}{4}$ mile track.
How far did you run?

Your car drove $5\frac{3}{5}$ times around a $2\frac{1}{8}$ mile track.
How far did the car travel?

▶▶▶▶ DIVIDING FRACTIONS ◀◀◀◀

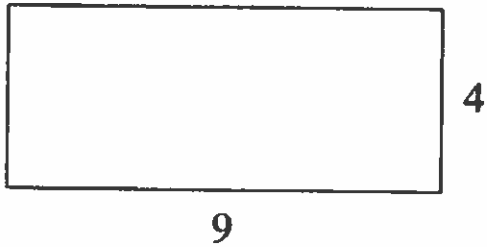
Find each quotient.

$\frac{2}{5} \div 8$	$\frac{5}{6} \div 4$	$\frac{7}{8} \div 2$	$\frac{9}{10} \div 4$
$3\frac{1}{2} \div 5$	$6\frac{1}{5} \div 2$	$9\frac{1}{3} \div 3$	$5\frac{2}{5} \div 2$
<p>You split $8\frac{1}{2}$ pounds of strawberries equally among 5 containers. How many pounds of strawberries are in each container?</p>	<p>A $12\frac{1}{5}$ inch long piece of ribbon is cut into 4 pieces. How long is each piece?</p>		
<p>A $4\frac{9}{10}$ foot long piece of wood is cut into 6 sections. How long is each section?</p>	<p>A $12\frac{2}{3}$ pound bag of chocolate is split equally among 20 boxes. How much chocolate is in each box?</p>		

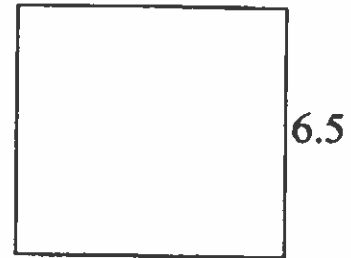
AREA OF QUADRILATERALS

Find the area of each shape.

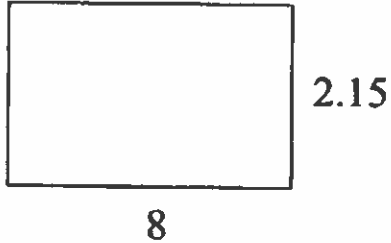
Inches:



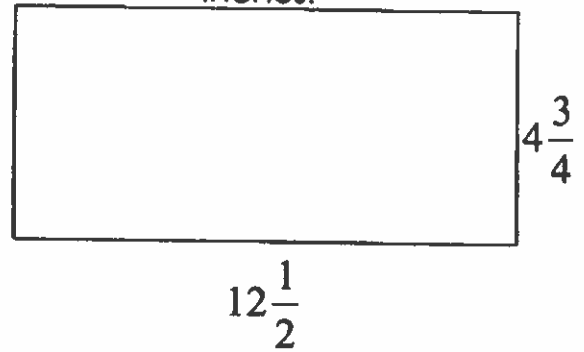
Feet:



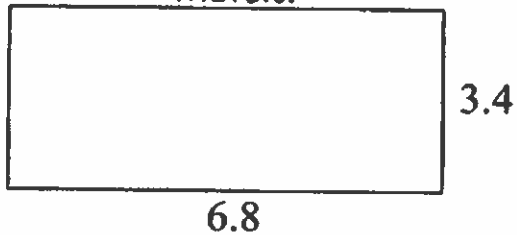
Centimeters:



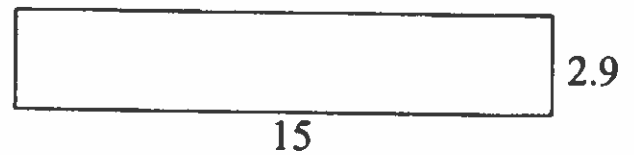
Inches:



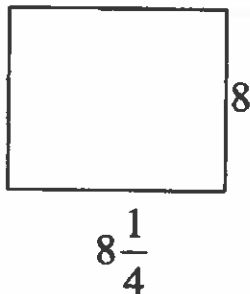
Meters:



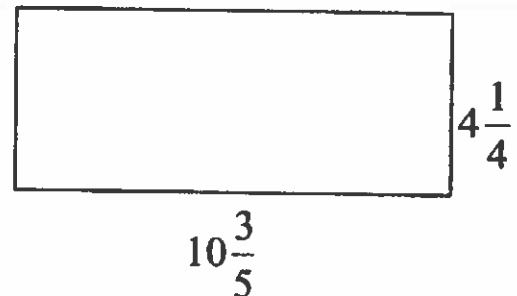
Yards:



Inches:



Feet:

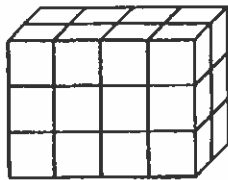
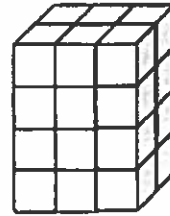
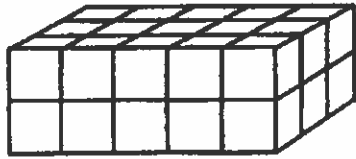




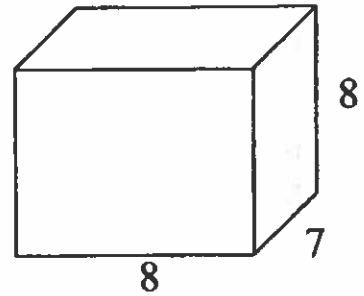
VOLUME



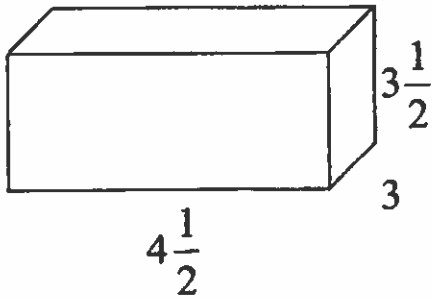
Find the volume of each shape.



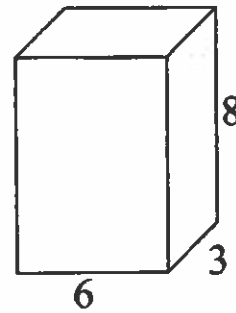
Feet



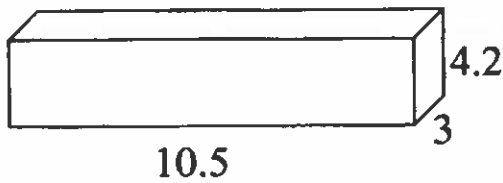
Inches



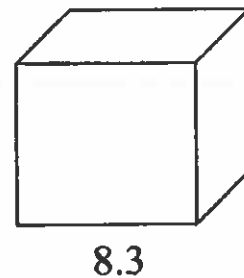
Feet



Centimeters



Inches

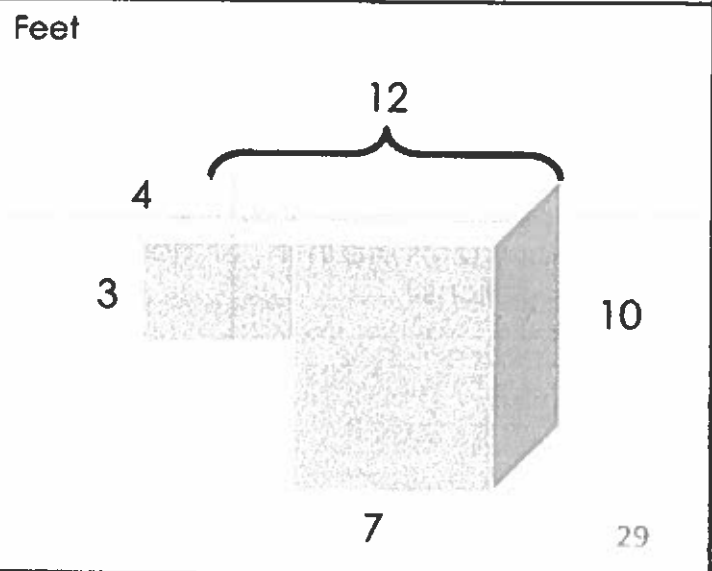
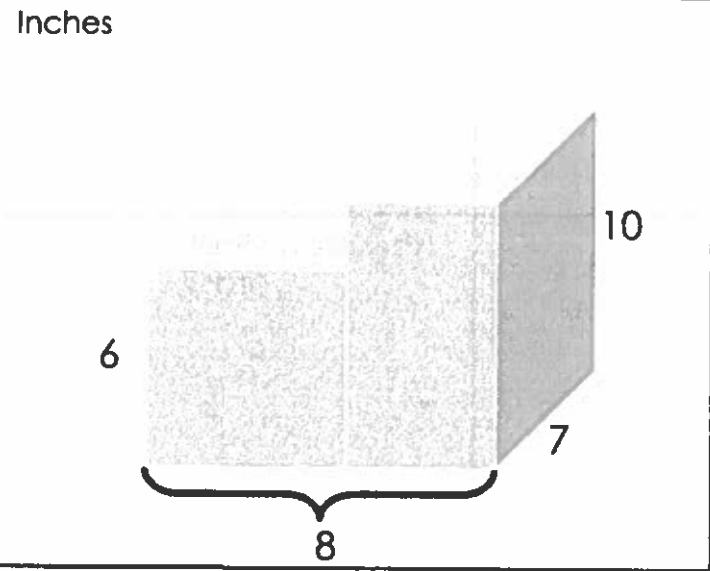
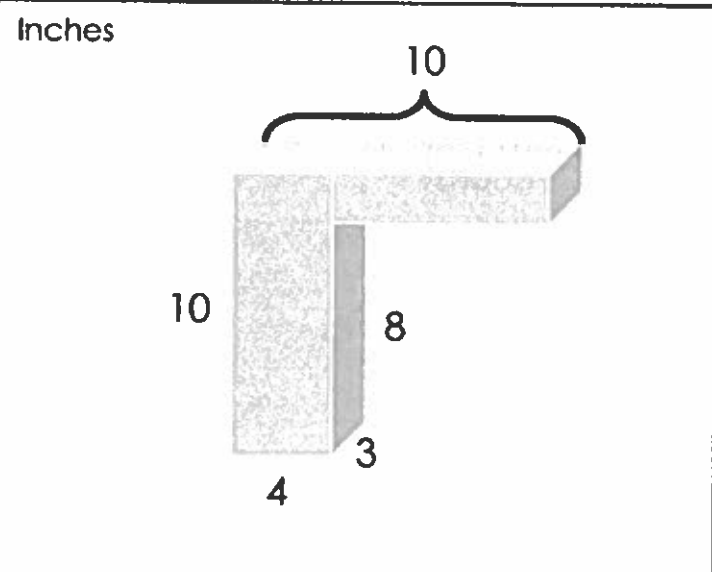
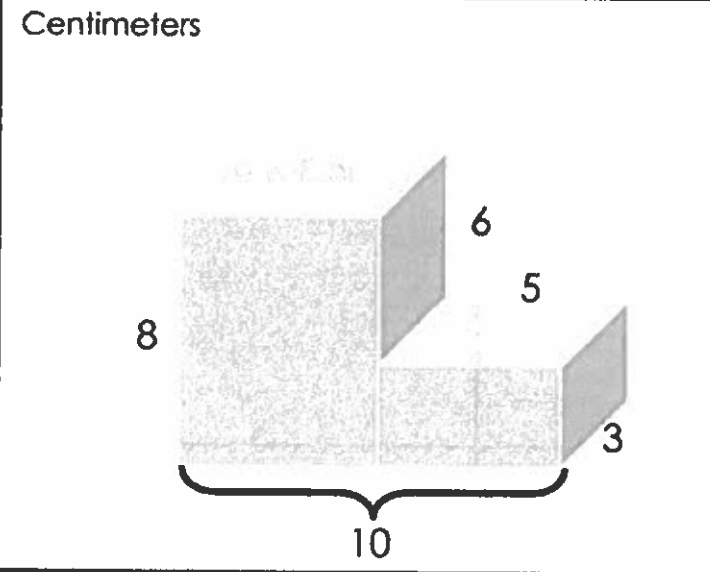
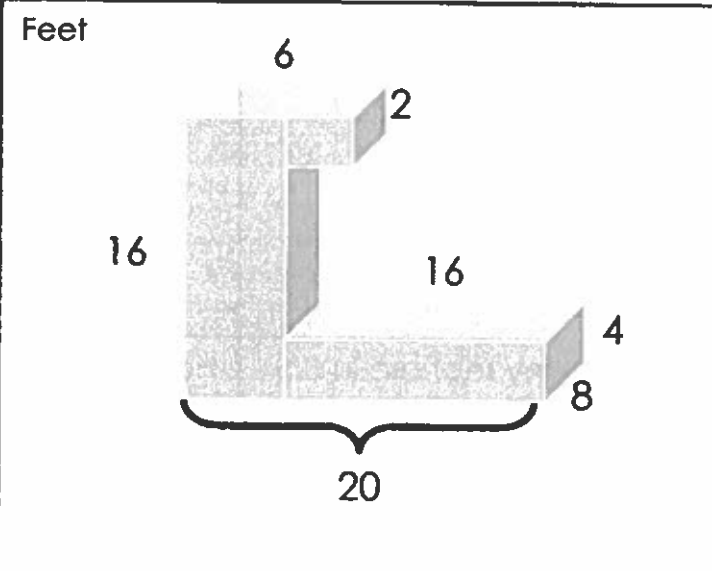
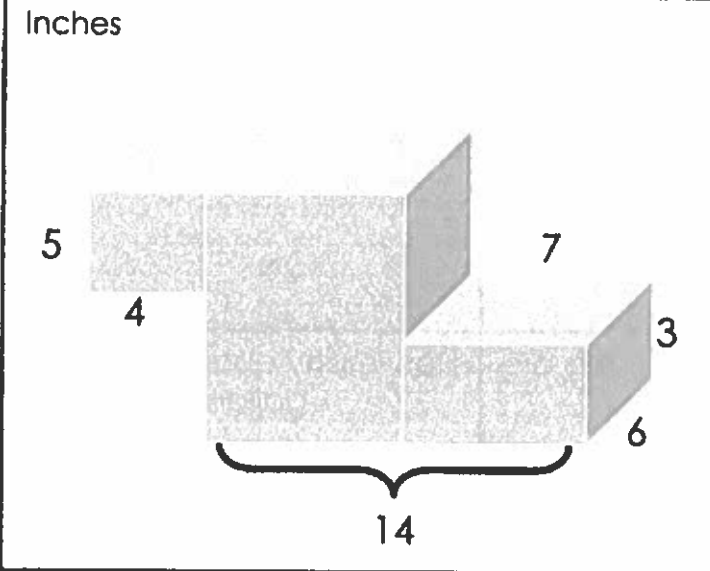




VOLUME



Find the volume of each composite shape.



MEASUREMENT CONVERSIONS



How many quarts are in 9 gallons?	How many gallons are in 44 quarts?	How many cups are in 6 pints?
How many feet are in 3.5 yards?	How many centimeters are in $5\frac{1}{2}$ meters?	How many quarts are in 2.5 gallons?
How many pints are in 4 quarts?	How many inches are in $2\frac{3}{4}$ yards?	How many centimeters are in $3\frac{1}{2}$ meters?
How many meters are in 450 centimeters?	How many yards are in 38 inches?	How many gallons are in 10 quarts?
How many pints are in 4 gallons?	How many pints are in 40 ounces?	How many feet are in 2.4 yards?



LINE PLOTS



For questions 1 – 2, create a line plot using the given information.

1. The ages of kids in an art club:

6, 8, 9, 8, 7, 10, 8, 9, 7, 7, 6, 9, 10, 10, 8, 8

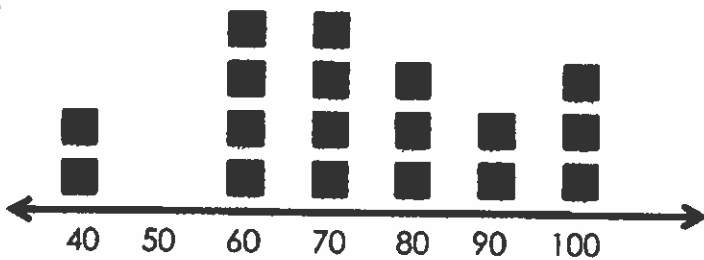


2. The height of flowers in a garden:

12, 16, 17, 15, 16, 14, 15, 16, 17, 14, 14, 16, 19, 12, 14, 17



Use the line plot below to answer questions 3 – 5.



3. The line plot shows test scores for a 10 question quiz. How many students scored higher than 70%?

4. How many students got a perfect score?

5. How many students scored 60% or lower?

