

Name _____

Date _____

1. Use your centimeter cubes to build the figures pictured below on centimeter grid paper. Find the total volume of each figure you built, and explain how you counted the cubic units. Be sure to include units.

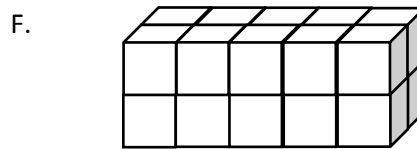
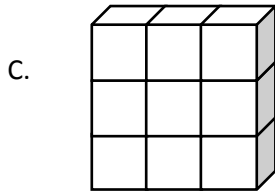
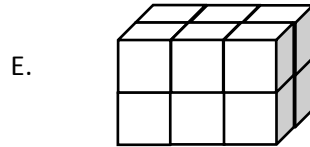
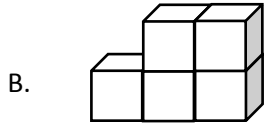
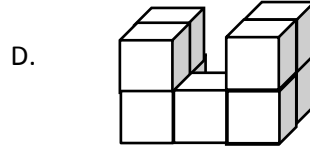
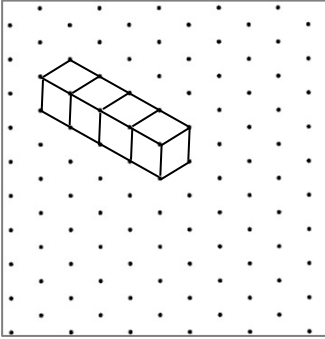


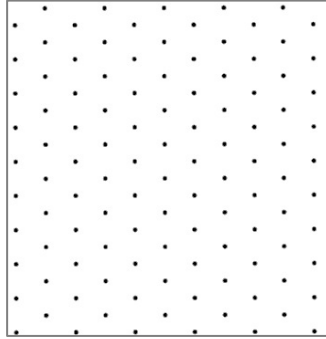
Figure	Volume	Explanation
A		
B		
C		
D		
E		
F		

2. Build 2 different structures with the following volumes using your unit cubes. Then, draw one of the figures on the dot paper. One example has been drawn for you.

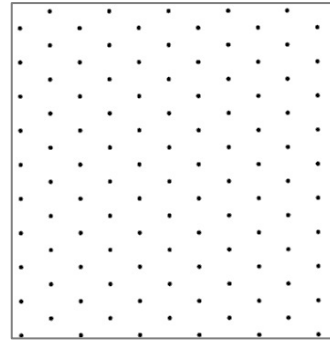
a. 4 cubic units



b. 7 cubic units

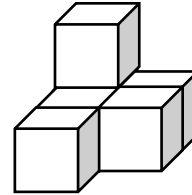


c. 8 cubic units



3. Joyce says that the figure below, made of 1 cm cubes, has a volume of 5 cubic centimeters.

a. Explain her mistake.

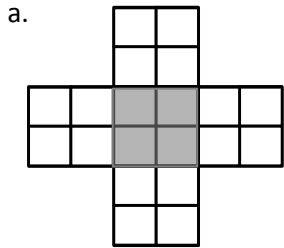


- b. Imagine if Joyce wants to build a second layer of the same structure identical to the figure above. What would its volume be then? Explain how you know.

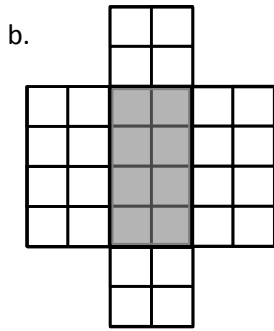
Name _____

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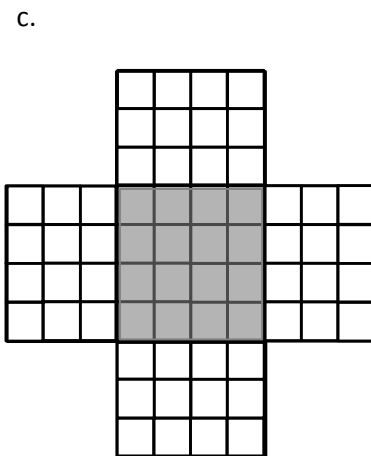
1. Shade the following figures on centimeter grid paper. Cut and fold each to make 3 open boxes, taping them so they hold their shapes. Pack each box with cubes. Write how many cubes fill the box.



Number of cubes: _____



Number of cubes: _____



Number of cubes: _____

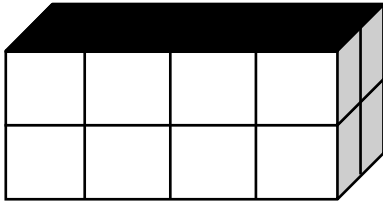
2. Predict how many centimeter cubes will fit in each box, and briefly explain your prediction. Use cubes to find the actual volume. (The figures are not drawn to scale.)



Prediction: _____

Actual: _____

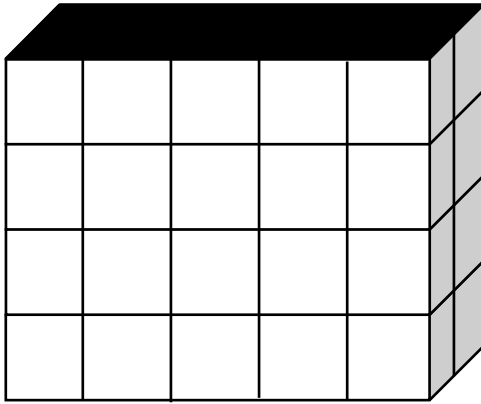
b.



Prediction: _____

Actual: _____

c.



Prediction: _____

Actual: _____

3. Cut out the net in the template, and fold it into a cube. Predict the number of 1-centimeter cubes that would be required to fill it. Test your prediction using as few cubes as possible. What did you discover?

Prediction: _____

What I discovered:

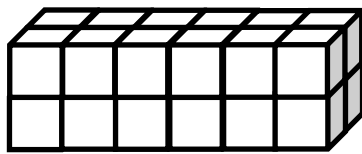
Name _____

Date _____

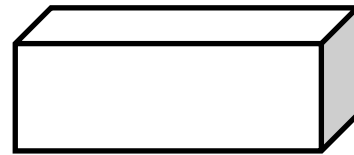
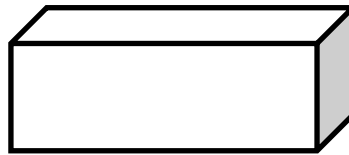
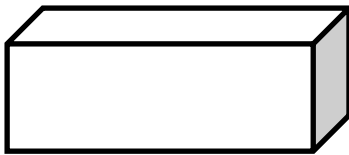
1. Use the prisms to find the volume.

- Build the rectangular prism pictured below to the left with your cubes, if necessary.
- Decompose it into layers in three different ways, and show your thinking on the blank prisms.
- Complete the missing information in the table.

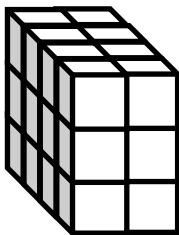
a.



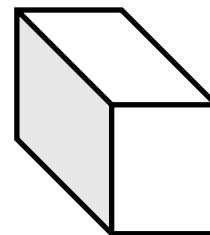
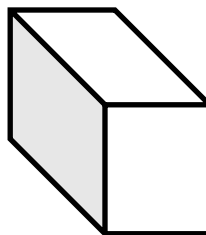
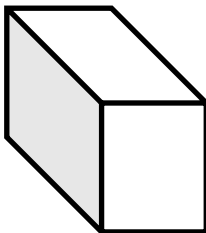
Number of Layers	Number of Cubes in Each Layer	Volume of the Prism
		cubic cm
		cubic cm
		cubic cm



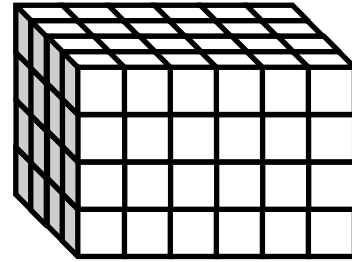
b.



Number of Layers	Number of Cubes in Each Layer	Volume of the Prism
		cubic cm
		cubic cm
		cubic cm



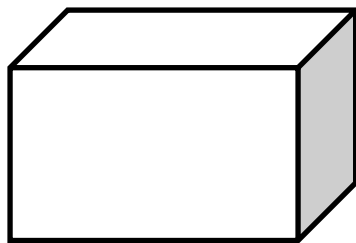
2. Josh and Jonah were finding the volume of the prism to the right. The boys agree that 4 layers can be added together to find the volume. Josh says that he can see on the end of the prism that each layer will have 16 cubes in it. Jonah says that each layer has 24 cubes in it. Who is right? Explain how you know using words, numbers, and/or pictures.



3. Marcos makes a prism 1 inch by 5 inches by 5 inches. He then decides to create layers equal to his first one. Fill in the chart below, and explain how you know the volume of each new prism.

Number of Layers	Volume	Explanation
2		
4		
7		

4. Imagine the rectangular prism below is 6 meters long, 4 meters tall, and 2 meters wide. Draw horizontal lines to show how the prism could be decomposed into layers that are 1 meter in height.



It has _____ layers from bottom to top.

Each layer contains _____ cubic units.

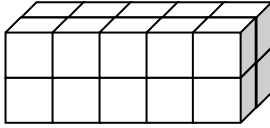
The volume of this prism is _____.

Name _____

Date _____

1. Each rectangular prism is built from centimeter cubes. State the dimensions, and find the volume.

a.



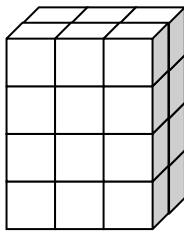
Length: _____ cm

Width: _____ cm

Height: _____ cm

Volume: _____ cm^3

b.



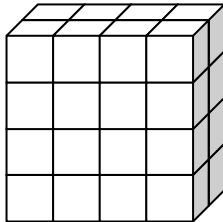
Length: _____ cm

Width: _____ cm

Height: _____ cm

Volume: _____ cm^3

c.



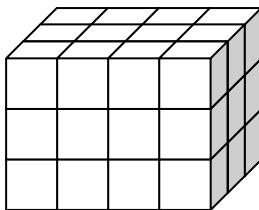
Length: _____ cm

Width: _____ cm

Height: _____ cm

Volume: _____ cm^3

d.



Length: _____ cm

Width: _____ cm

Height: _____ cm

Volume: _____ cm^3

2. Write a multiplication sentence that you could use to calculate the volume for each rectangular prism in Problem 1. Include the units in your sentences.

a. _____

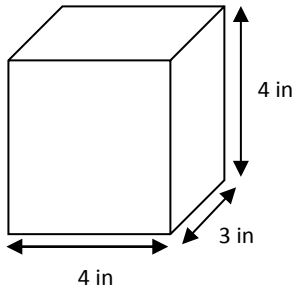
b. _____

c. _____

d. _____

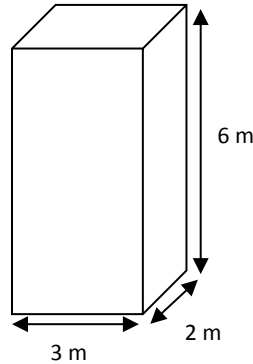
3. Calculate the volume of each rectangular prism. Include the units in your number sentences.

a.



V = _____

b.

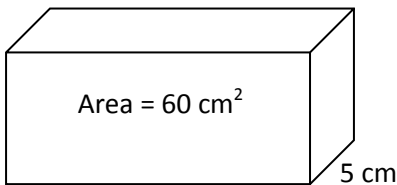


V = _____

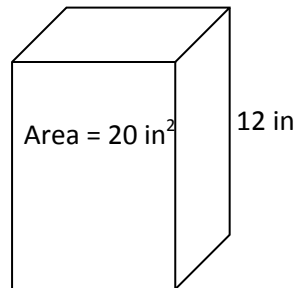
4. Tyron is constructing a box in the shape of a rectangular prism to store his baseball cards. It has a length of 10 centimeters, a width of 7 centimeters, and a height of 8 centimeters. What is the volume of the box?

5. Aaron says more information is needed to find the volume of the prisms. Explain why Aaron is mistaken, and calculate the volume of the prisms.

a.



b.



Name _____

Date _____

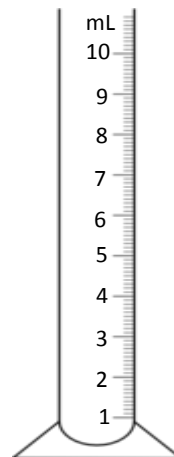
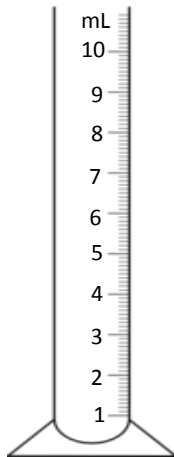
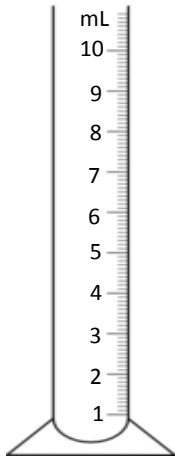
1. Determine the volume of two boxes on the table using cubes, and then confirm by measuring and multiplying.

Box Number	Number of Cubes Packed	Measurements			Volume
		Length	Width	Height	

2. Using the same boxes from Problem 1, record the amount of liquid that your box can hold.

Box Number	Liquid the Box Can Hold
	mL
	mL

3. Shade to show the water in the beaker.



At first:

_____ mL

After 1 mL water added:

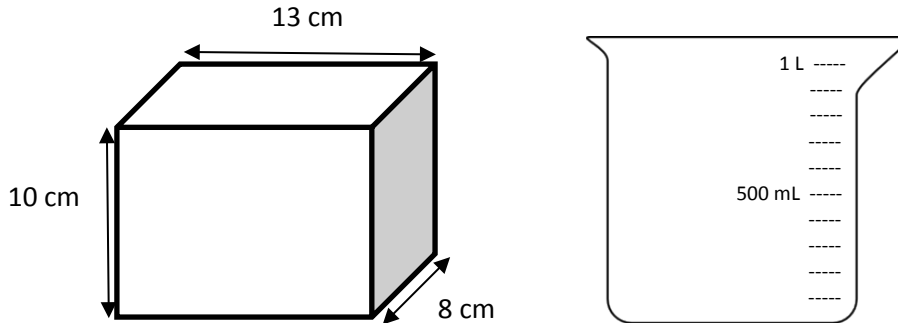
_____ mL

After 1 cm cube added:

_____ mL

4. What conclusion can you draw about 1 cubic centimeter and 1 mL?

5. The tank, shaped like a rectangular prism, is filled to the top with water.



Will the beaker hold all the water in the tank? If yes, how much more will the beaker hold? If no, how much more will the tank hold than the beaker? Explain how you know.

6. A rectangular fish tank measures 26 cm by 20 cm by 18 cm. The tank is filled with water to a depth of 15 cm.

- a. What is the volume of the water in mL?
- b. How many liters is that?
- c. How many more mL of water will be needed to fill the tank to the top? Explain how you know.

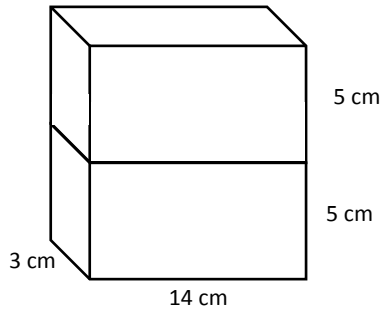
7. A rectangular container is 25 cm long and 20 cm wide. If it holds 1 liter of water when full, what is its height?

Name _____

Date _____

1. Find the total volume of the figures, and record your solution strategy.

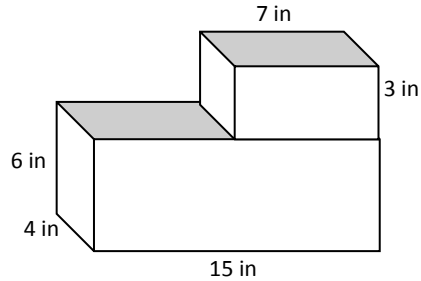
a.



Volume: _____

Solution Strategy:

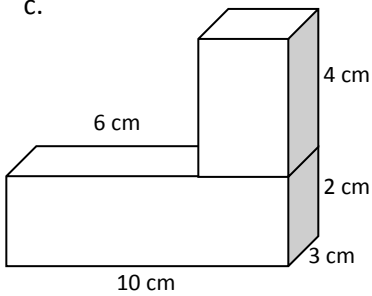
b.



Volume: _____

Solution Strategy:

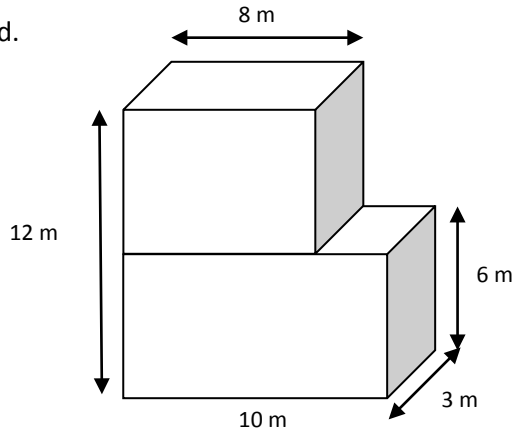
c.



Volume: _____

Solution Strategy:

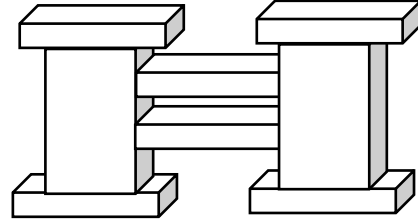
d.



Volume: _____

Solution Strategy:

2. A sculpture (pictured below) is made of two sizes of rectangular prisms. One size measures 13 in by 8 in by 2 in. The other size measures 9 in by 8 in by 18 in. What is the total volume of the sculpture?



3. The combined volume of two identical cubes is 128 cubic centimeters. What is the side length of each cube?

4. A rectangular tank with a base area of 24 cm^2 is filled with water and oil to a depth of 9 cm. The oil and water separate into two layers when the oil rises to the top. If the thickness of the oil layer is 4 cm, what is the volume of the water?



5. Two rectangular prisms have a combined volume of 432 cubic feet. Prism A has half the volume of Prism B.
- What is the volume of Prism A? Prism B?
 - If Prism A has a base area of 24 ft^2 , what is the height of Prism A?
 - If Prism B's base is $\frac{2}{3}$ the area of Prism A's base, what is the height of Prism B?

Name _____

Date _____

Geoffrey builds rectangular planters.

1. Geoffrey’s first planter is 8 feet long and 2 feet wide. The container is filled with soil to a height of 3 feet in the planter. What is the volume of soil in the planter? Explain your work using a diagram.

2. Geoffrey wants to grow some tomatoes in four large planters. He wants each planter to have a volume of 320 cubic feet, but he wants them all to be different. Show four different ways Geoffrey can make these planters, and draw diagrams with the planters’ measurements on them.

Planter A	Planter B
Planter C	Planter D

3. Geoffrey wants to make one planter that extends from the ground to just below his back window. The window starts 3 feet off the ground. If he wants the planter to hold 36 cubic feet of soil, name one way he could build the planter so it is not taller than 3 feet. Explain how you know.
4. After all of this gardening work, Geoffrey decides he needs a new shed to replace the old one. His current shed is a rectangular prism that measures 6 feet long by 5 feet wide by 8 feet high. He realizes he needs a shed with 480 cubic feet of storage.
- a. Will he achieve his goal if he doubles each dimension? Why or why not?
- b. If he wants to keep the height the same, what could the other dimensions be for him to get the volume he wants?
- c. If he uses the dimensions in Part (b), what could be the area of the new shed's floor?

Name _____

Date _____

Using the box patterns, construct a sculpture containing at least 5, but not more than 7, rectangular prisms that meets the following requirements in the table below.

1.	My sculpture has 5 to 7 rectangular prisms.	Number of prisms: _____
2.	Each prism is labeled with a letter, dimensions, and volume.	
	Prism A _____ by _____ by _____	Volume = _____
	Prism B _____ by _____ by _____	Volume = _____
	Prism C _____ by _____ by _____	Volume = _____
	Prism D _____ by _____ by _____	Volume = _____
	Prism E _____ by _____ by _____	Volume = _____
	Prism ____ _____ by _____ by _____	Volume = _____
	Prism ____ _____ by _____ by _____	Volume = _____
3.	Prism D has $\frac{1}{2}$ the volume of prism ____.	Prism D Volume = _____ Prism ____ Volume = _____
4.	Prism E has $\frac{1}{3}$ the volume of prism ____.	Prism E Volume = _____ Prism ____ Volume = _____
5.	The total volume of all the prisms is 1,000 cubic centimeters or less.	Total volume: _____ Show calculations:

Name _____

Date _____

I reviewed project number _____.

Use the rubric below to evaluate your friend’s project. Ask questions and measure the parts to determine whether your friend has all the required elements. Respond to the prompt in italics in the third column. The final column can be used to write something you find interesting about that element if you like.

Space is provided beneath the rubric for your calculations.

	Requirement	Element present? (✓)	Specifics of Element	Notes
1.	Sculpture has 5 to 7 prisms.		<i># of prisms:</i>	
2.	All prisms are labeled with a letter.		<i>Write letters used:</i>	
3.	All prisms have correct dimensions with units written on the top.		<i>List any prisms with incorrect dimensions or units:</i>	
4.	All prisms have correct volume with units written on top.		<i>List any prism with incorrect dimensions or units:</i>	
5.	Prism D has $\frac{1}{2}$ the volume of another prism.		<i>Record on next page:</i>	
6.	Prism E has $\frac{1}{3}$ the volume of another prism.		<i>Record on next page:</i>	
7.	The total volume of all the parts together is 1,000 cubic units or less.		<i>Total volume:</i>	

Calculations:

8. Measure the dimensions of each prism. Calculate the volume of each prism and the total volume. Record that information in the table below. If your measurements or volume differ from those listed on the project, put a star by the prism label in the table below, and record on the rubric.

Prism	Dimensions	Volume
A	_____ by _____ by _____	
B	_____ by _____ by _____	
C	_____ by _____ by _____	
D	_____ by _____ by _____	
E	_____ by _____ by _____	
	_____ by _____ by _____	
	_____ by _____ by _____	

9. Prism D’s volume is $\frac{1}{2}$ that of Prism _____.
Show calculations below.

10. Prism E’s volume is $\frac{1}{3}$ that of Prism _____.
Show calculations below.

11. Total volume of sculpture: _____.
Show calculations below.

Name _____ Date _____

Sketch the rectangles and your tiling. Write the dimensions and the units you counted in the blanks. Then, use multiplication to confirm the area. Show your work. We will do Rectangles A and B together.

1. **Rectangle A:**

Rectangle A is

_____ units long _____ units wide

Area = _____ units²

2. **Rectangle B:**

Rectangle B is

_____ units long _____ units wide

Area = _____ units²

3. **Rectangle C:**

Rectangle C is

_____ units long _____ units wide

Area = _____ units²

4. **Rectangle D:**

Rectangle D is

_____ units long _____ units wide

Area = _____ units²

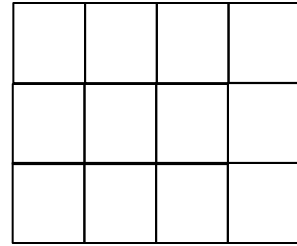
5. **Rectangle E:**

Rectangle E is

_____ units long _____ units wide

Area = _____ units²

6. The rectangle to the right is composed of squares that measure $2\frac{1}{4}$ inches on each side. What is its area in square inches? Explain your thinking using pictures and numbers.



7. A rectangle has a perimeter of $35\frac{1}{2}$ feet. If the length is 12 feet, what is the area of the rectangle?

Name _____

Date _____

Draw the rectangle and your tiling.

Write the dimensions and the units you counted in the blanks.

Then, use multiplication to confirm the area. Show your work.

1. Rectangle A:

2. Rectangle B:

Rectangle A is

_____ units long _____ units wide

Area = _____ units²

Rectangle B is

_____ units long _____ units wide

Area = _____ units²

3. Rectangle C:

4. Rectangle D:

Rectangle C is

_____ units long _____ units wide

Area = _____ units²

Rectangle D is

_____ units long _____ units wide

Area = _____ units²

5. Colleen and Caroline each built a rectangle out of square tiles placed in 3 rows of 5. Colleen used tiles that measured $1\frac{2}{3}$ cm squares. Caroline used tiles that measured $3\frac{1}{3}$ cm.
- Draw the girls' rectangles, and label the lengths and widths of each.
 - What are the areas of the rectangles in square centimeters?
 - Compare the area of the rectangles.
6. A square has a perimeter of 51 inches. What is the area of the square?

Name _____

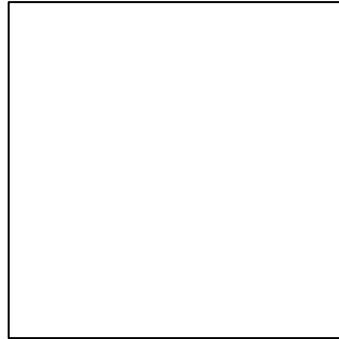
Date _____

1. Measure each rectangle with your inch ruler, and label the dimensions. Use the area model to find each area.

a.



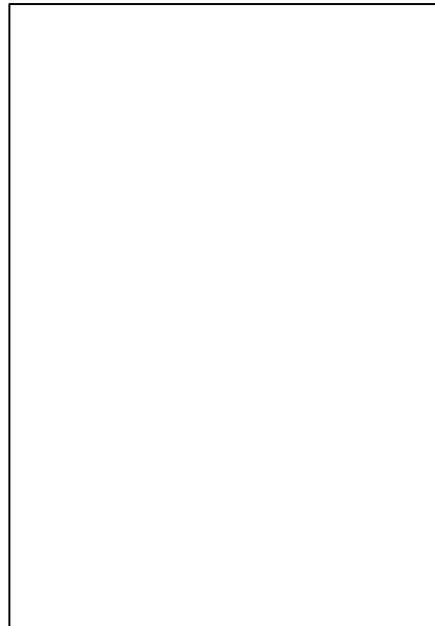
b.



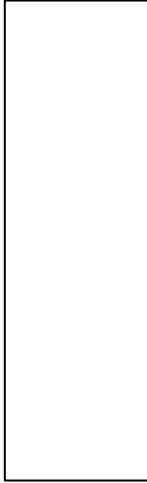
c.



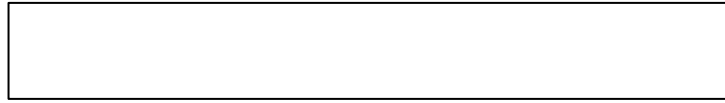
d.



e.



f.



2. Find the area of rectangles with the following dimensions. Explain your thinking using the area model.

a. $1 \text{ ft} \times 1\frac{1}{2} \text{ ft}$

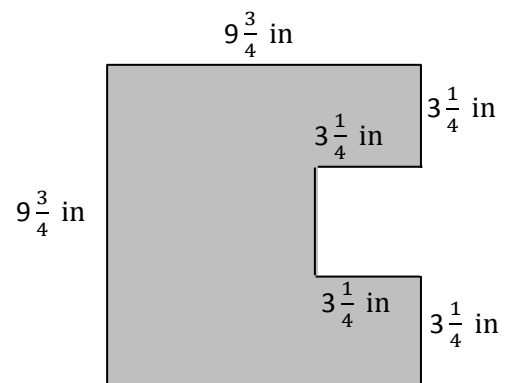
b. $1\frac{1}{2} \text{ yd} \times 1\frac{1}{2} \text{ yd}$

c. $2\frac{1}{2} \text{ yd} \times 1\frac{3}{16} \text{ yd}$

3. Hanley is putting carpet in her house. She wants to carpet her living room, which measures $15 \text{ ft} \times 12\frac{1}{3} \text{ ft}$. She also wants to carpet her dining room, which is $10\frac{1}{4} \text{ ft} \times 10\frac{1}{3} \text{ ft}$. How many square feet of carpet will she need to cover both rooms?

4. Fred cut a $9\frac{3}{4}$ -inch square of construction paper for an art project. He cut a square from the edge of the big rectangle whose sides measured $3\frac{1}{4}$ inches. (See picture below.)
- a. What is the area of the smaller square that Fred cut out?

- b. What is the area of the remaining paper?



Name _____ Date _____

1. Find the area of the following rectangles. Draw an area model if it helps you.

a. $\frac{5}{4} \text{ km} \times \frac{12}{5} \text{ km}$

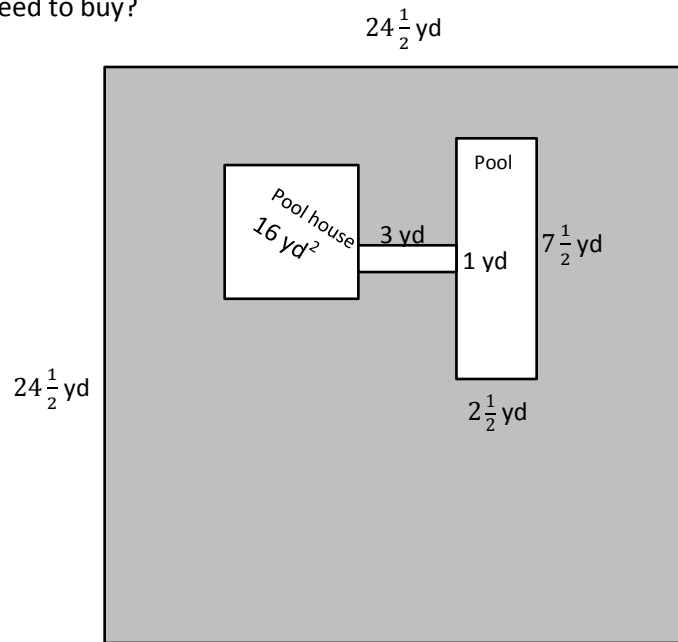
b. $16\frac{1}{2} \text{ m} \times 4\frac{1}{5} \text{ m}$

c. $4\frac{1}{3} \text{ yd} \times 5\frac{2}{3} \text{ yd}$

d. $\frac{7}{8} \text{ mi} \times 4\frac{1}{3} \text{ mi}$

2. Julie is cutting rectangles out of fabric to make a quilt. If the rectangles are $2\frac{3}{5}$ inches wide and $3\frac{2}{3}$ inches long, what is the area of four such rectangles?

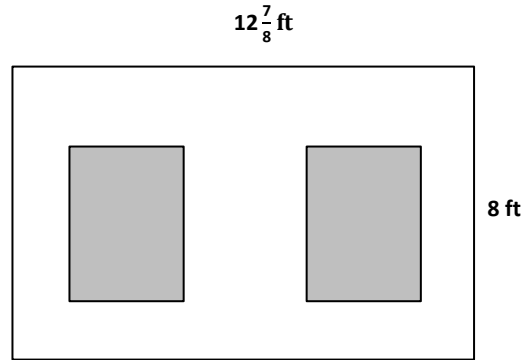
3. Mr. Howard’s pool is connected to his pool house by a sidewalk as shown. He wants to buy sod for the lawn, shown in gray. How much sod does he need to buy?



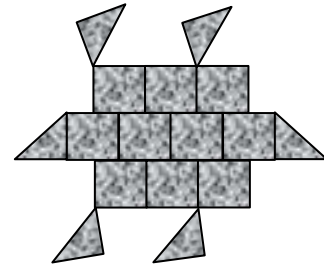
Name _____

Date _____

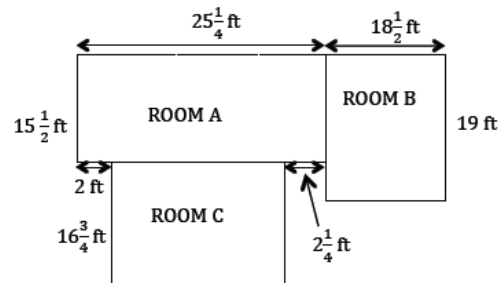
1. George decided to paint a wall with two windows. Both windows are $3\frac{1}{2}$ ft by $4\frac{1}{2}$ ft rectangles. Find the area the paint needs to cover.



2. Joe uses square tiles, some of which he cuts in half, to make the figure below. If each square tile has a side length of $2\frac{1}{2}$ inches, what is the total area of the figure?



3. All-In-One Carpets is installing carpeting in three rooms. How many square feet of carpet are needed to carpet all three?



4. Mr. Johnson needs to buy sod for his front lawn.
- If the lawn measures $36\frac{2}{3}$ ft by $45\frac{1}{6}$ ft, how many square feet of sod will he need?
 - If sod is only sold in whole square feet, how much will Mr. Johnson have to pay?

Sod Prices

Area	Price per square foot
First 1,000 sq ft	\$0.27
Next 500 sq ft	\$0.22
Additional square feet	\$0.19

5. Jennifer’s class decides to make a quilt. Each of the 24 students will make a quilt square that is 8 inches on each side. When they sew the quilt together, every edge of each quilt square will lose $\frac{3}{4}$ of an inch.
- Draw one way the squares could be arranged to make a rectangular quilt. Then, find the perimeter of your arrangement.
 - Find the area of the quilt.

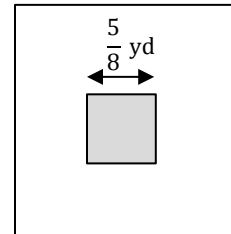
Name _____

Date _____

1. The length of a flowerbed is 4 times as long as its width. If the width is $\frac{3}{8}$ meter, what is the area?

2. Mrs. Johnson grows herbs in square plots. Her basil plot measures $\frac{5}{8}$ yd on each side.

a. Find the total area of the basil plot.



b. Mrs. Johnson puts a fence around the basil. If the fence is 2 ft from the edge of the garden on each side, what is the perimeter of the fence?

- c. What is the total area that the fence encloses?
3. Janet bought 5 yards of fabric $2\frac{1}{4}$ feet wide to make curtains. She used $\frac{1}{3}$ of the fabric to make a long set of curtains and the rest to make 4 short sets.
- a. Find the area of the fabric she used for the long set of curtains.
- b. Find the area of the fabric she used for each of the short sets.

4. Some wire is used to make 3 rectangles: A, B, and C. Rectangle B's dimensions are $\frac{3}{5}$ cm larger than Rectangle A's dimensions, and Rectangle C's dimensions are $\frac{3}{5}$ cm larger than Rectangle B's dimensions. Rectangle A is 2 cm by $3\frac{1}{5}$ cm.
- a. What is the total area of all three rectangles?
- b. If a 40 cm coil of wire was used to form the rectangles, how much wire is left?

Name _____

Date _____

1. Draw a pair of parallel lines in each box. Then, use the parallel lines to draw a trapezoid with the following:

<p>a. No right angles</p>	<p>b. Only 1 obtuse angle</p>
<p>c. 2 obtuse angles</p>	<p>d. At least 1 right angle</p>

Name _____

Date _____

1. Draw a parallelogram in each box with the attributes listed.

<p>a. No right angles.</p>	<p>b. At least 2 right angles.</p>
<p>c. Equal sides with no right angles.</p>	<p>d. All sides equal with at least 2 right angles.</p>

Name _____

Date _____

1. Draw the figures in each box with the attributes listed.

a. Rhombus with no right angles	b. Rectangle with not all sides equal
c. Rhombus with 1 right angle	d. Rectangle with all sides equal

2. Use the figures you drew to complete the tasks below.

- Measure the angles of the figures with your protractor, and record the measurements on the figures.
- Use a marker or crayon to circle pairs of angles inside each figure with a sum equal to 180° . Use a different color for each pair.

3. Draw a rhombus and a rectangle below.
- Draw the diagonals and measure their lengths. Record the measurements on the figure.
 - Measure the length of each segment of the diagonals from the vertex to the intersection point of the diagonals. Using a marker or crayon, color segments that have the same length. Use a different color for each different length.
- 4.
- List the properties that are shared by all of the rhombuses that you worked with today.
 - List the properties that are shared by all of the rectangles that you worked with today.
 - When can a trapezoid also be called a rhombus?
 - When can a parallelogram also be called a rectangle?
 - When can a quadrilateral also be called a rhombus?

Name _____

Date _____

1. Draw the figures in each box with the attributes listed. If your figure has more than one name, write it in the box.

<p>a. Rhombus with 2 right angles</p>	<p>b. Kite with all sides equal</p>
<p>c. Kite with 4 right angles</p>	<p>d. Kite with 2 pairs of adjacent sides equal (The pairs are not equal to each other.)</p>

2. Use the figures you drew to complete the tasks below.
- Measure the angles of the figures with your protractor, and record the measurements on the figures.
 - Use a marker or crayon to circle pairs of congruent angles inside each figure. Use a different color for each pair.

- 3.
- List the properties shared by all of the squares that you worked with today.
 - List the properties shared by all of the kites that you worked with today.
 - When can a rhombus also be called a square?
 - When can a kite also be called a square?
 - When can a trapezoid also be called a kite?

Name _____

Date _____

1. True or false. If the statement is false, rewrite it to make it true.

	T	F
a. All trapezoids are quadrilaterals.		
b. All parallelograms are rhombuses.		
c. All squares are trapezoids.		
d. All rectangles are squares.		
e. Rectangles are always parallelograms.		
f. All parallelograms are trapezoids.		
g. All rhombuses are rectangles.		
h. Kites are never rhombuses.		
i. All squares are kites.		
j. All kites are squares.		
k. All rhombuses are squares.		

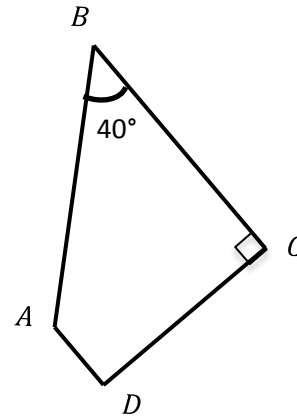
2. Fill in the blanks.

- a. $ABCD$ is a trapezoid. Find the measurements listed below.

$\angle A = \underline{\hspace{2cm}}^\circ$

$\angle D = \underline{\hspace{2cm}}^\circ$

What other names does this figure have?



- b. $RECT$ is a rectangle. Find the measurements listed below.

Line $TE = \underline{\hspace{2cm}}$

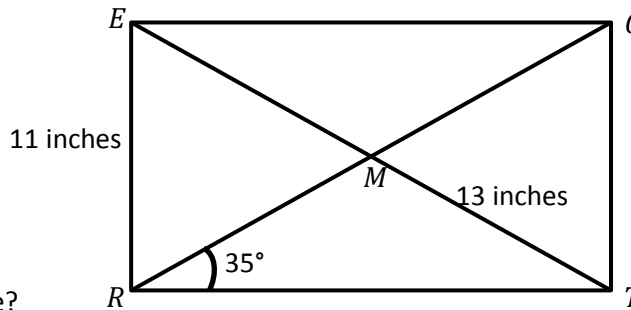
Line $RC = \underline{\hspace{2cm}}$

Line $CT = \underline{\hspace{2cm}}$

$\angle ERM = \underline{\hspace{2cm}}^\circ$

$\angle CTR = \underline{\hspace{2cm}}^\circ$

What other names does this figure have?



- c. $PARL$ is a parallelogram. Find the measurements listed below.

Line $AL = \underline{\hspace{2cm}}$

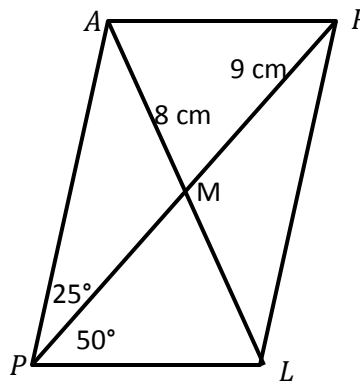
Line $PR = \underline{\hspace{2cm}}$

$\angle ARL = \underline{\hspace{2cm}}^\circ$

$\angle PAR = \underline{\hspace{2cm}}^\circ$

$\angle RLP = \underline{\hspace{2cm}}^\circ$

What other names does this figure have?



Name _____ Date _____

1. Write the number on your task card and a summary of the task in the blank. Then, draw the figure in the box. Label your figure with as many names as you can. Circle the most specific name.

Task #__ : _____	Task #__ : _____
Task #__ : _____	Task #__ : _____
Task #__ : _____	Task #__ : _____

Name _____

Date _____

1. The following solids are made up of 1 cm cubes. Find the total volume of each figure, and write it in the chart below.

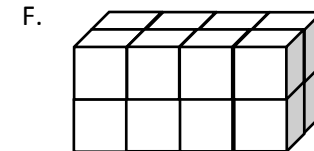
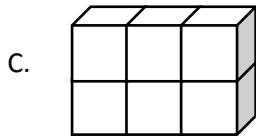
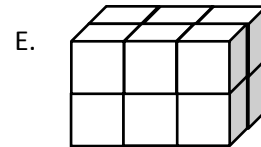
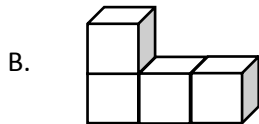
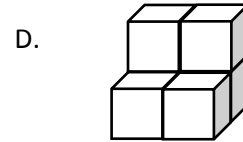
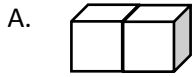
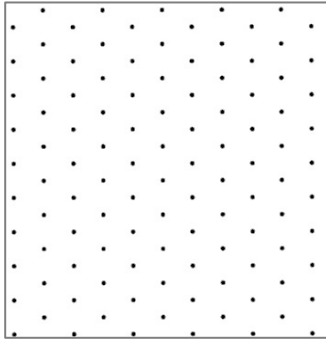


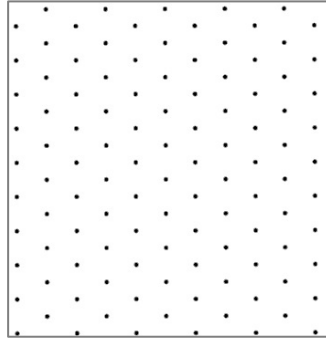
Figure	Volume	Explanation
A		
B		
C		
D		
E		
F		

2. Draw a figure with the given volume on the dot paper.

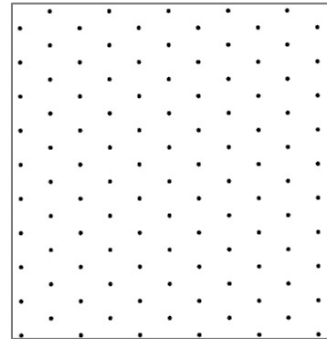
a. 3 cubic units



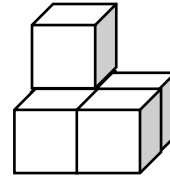
b. 6 cubic units



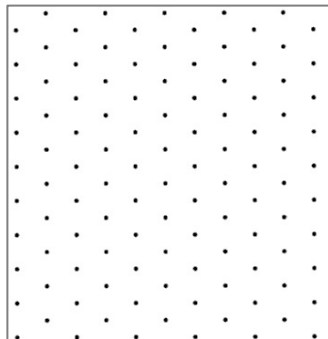
c. 12 cubic units



3. John built and drew a structure that has a volume of 5 cubic centimeters. His little brother tells him he made a mistake because he only drew 4 cubes. Help John explain to his brother why his drawing is accurate.



4. Draw another figure below that represents a structure with a volume of 5 cubic centimeters.

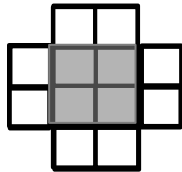


Name _____

Date _____

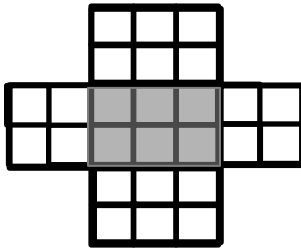
1. Make the following boxes on centimeter grid paper. Cut and fold each to make 3 open boxes, taping them so they hold their shapes. How many cubes would fill each box? Explain how you found the number.

a.



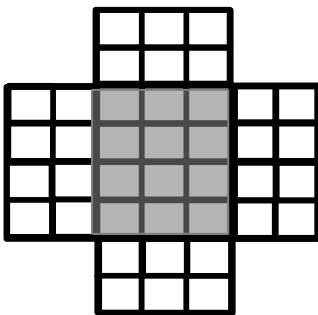
Number of cubes: _____

b.



Number of cubes: _____

c.



Number of cubes: _____

2. How many centimeter cubes would fit inside each box? Explain your answer using words and diagrams on the box. (The figures are not drawn to scale.)

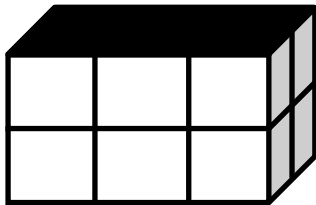
a.



Number of cubes: _____

Explanation:

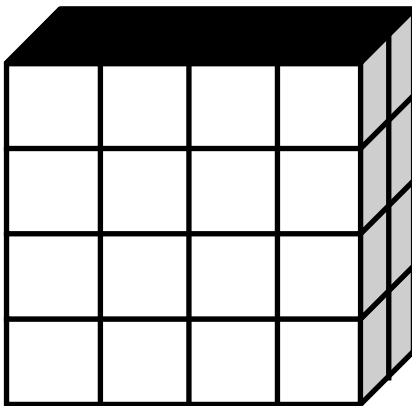
b.



Number of cubes: _____

Explanation:

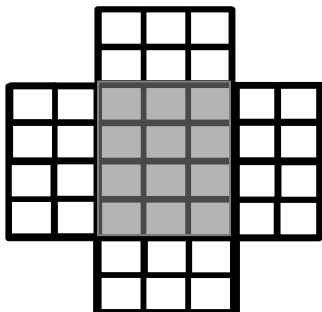
c.



Number of cubes: _____

Explanation:

3. The box pattern below holds 24 1-centimeter cubes. Draw two different box patterns that would hold the same number of cubes.



Name _____

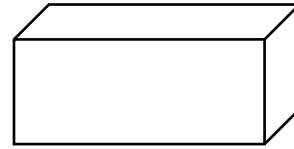
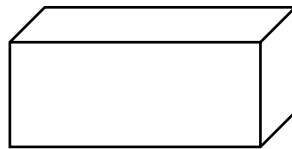
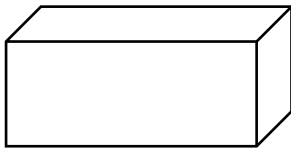
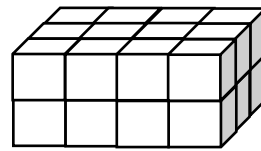
Date _____

1. Use the prisms to find the volume.

- The rectangular prisms pictured below were constructed with 1 cm cubes.
- Decompose each prism into layers in three different ways, and show your thinking on the blank prisms.
- Complete each table.

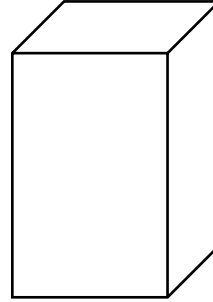
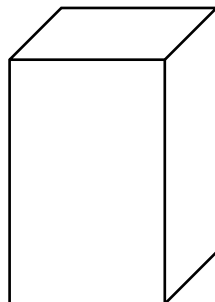
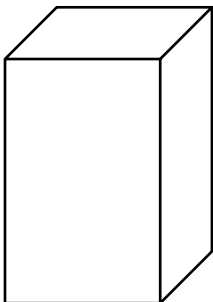
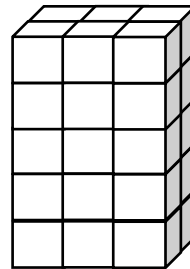
a.

Number of Layers	Number of Cubes in Each Layer	Volume of the Prism
		cubic cm
		cubic cm
		cubic cm

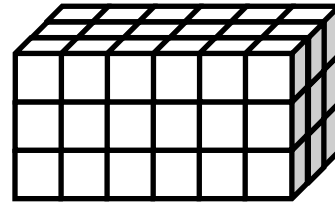


b.

Number of Layers	Number of Cubes in Each Layer	Volume of the Prism
		cubic cm
		cubic cm
		cubic cm



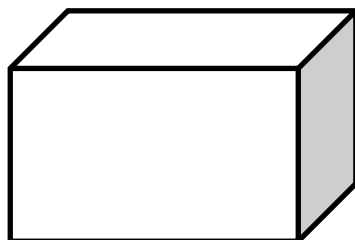
2. Stephen and Chelsea want to increase the volume of this prism by 72 cubic centimeters. Chelsea wants to add eight layers, and Stephen says they only need to add four layers. Their teacher tells them they are both correct. Explain how this is possible.



3. Juliana makes a prism 4 inches across and 4 inches wide but only 1 inch tall. She then decides to create layers equal to her first one. Fill in the chart below, and explain how you know the volume of each new prism.

Number of Layers	Volume	Explanation
3		
5		
7		

4. Imagine the rectangular prism below is 4 meters long, 3 meters tall, and 2 meters wide. Draw horizontal lines to show how the prism could be decomposed into layers that are 1 meter in height.



It has _____ layers from left to right.

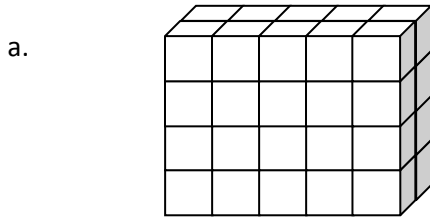
Each layer contains _____ cubic units.

The volume of this prism is _____.

Name _____

Date _____

1. Each rectangular prism is built from centimeter cubes. State the dimensions and find the volume.

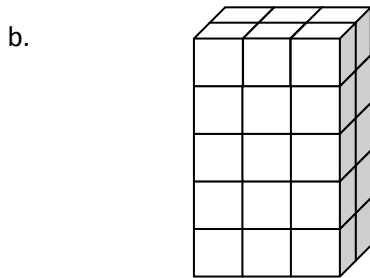


Length: _____ cm

Width: _____ cm

Height: _____ cm

Volume: _____ cm³

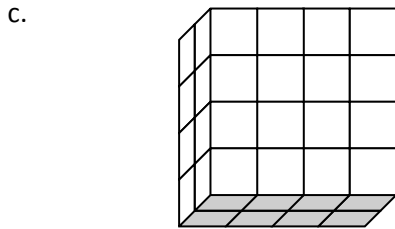


Length: _____ cm

Width: _____ cm

Height: _____ cm

Volume: _____ cm³

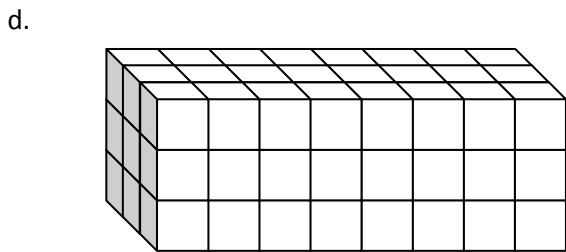


Length: _____ cm

Width: _____ cm

Height: _____ cm

Volume: _____ cm³



Length: _____ cm

Width: _____ cm

Height: _____ cm

Volume: _____ cm³

2. Write a multiplication sentence that you could use to calculate the volume for each rectangular prism in Problem 1. Include the units in your sentences.

a. _____

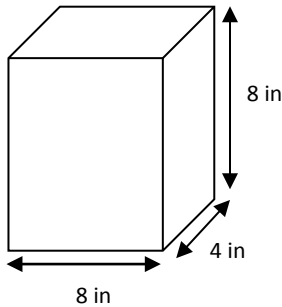
b. _____

c. _____

d. _____

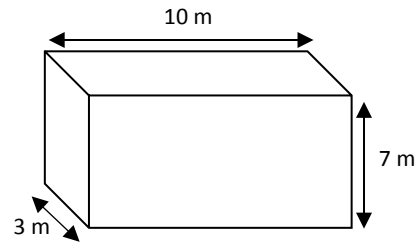
3. Calculate the volume of each rectangular prism. Include the units in your number sentences.

a.



Volume: _____

b.



Volume: _____

4. Mrs. Johnson is constructing a box in the shape of a rectangular prism to store clothes for the summer. It has a length of 28 inches, a width of 24 inches, and a height of 30 inches. What is the volume of the box?

5. Calculate the volume of each rectangular prism using the information that is provided.

a. Face area: 56 square meters

Height: 4 meters

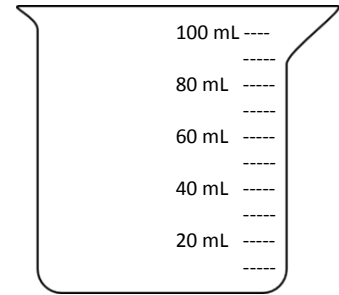
b. Face area: 169 square inches

Height: 14 inches

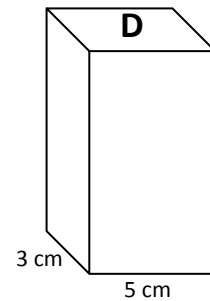
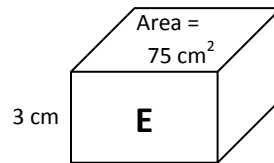
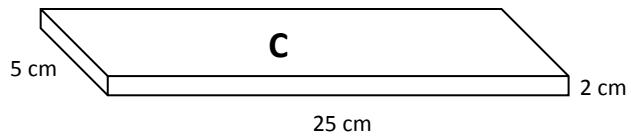
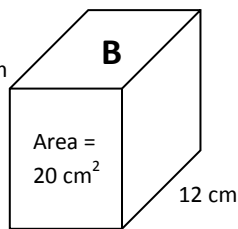
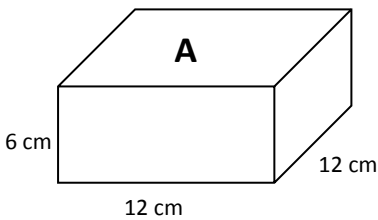
Name _____

Date _____

1. Johnny filled a container with 30 centimeter cubes. Shade the beaker to show how much water the container will hold. Explain how you know.



2. A beaker contains 250 mL of water. Jack wants to pour the water into a container that will hold the water. Which of the containers pictured below could he use? Explain your choices.



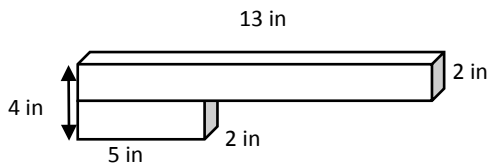
3. On the back of this paper, describe the details of the activities you did in class today. Include what you learned about cubic centimeters and milliliters. Give an example of a problem you solved with an illustration.

Name _____

Date _____

1. Find the total volume of the figures, and record your solution strategy.

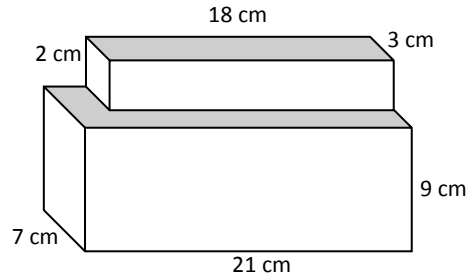
a.



Volume: _____

Solution Strategy:

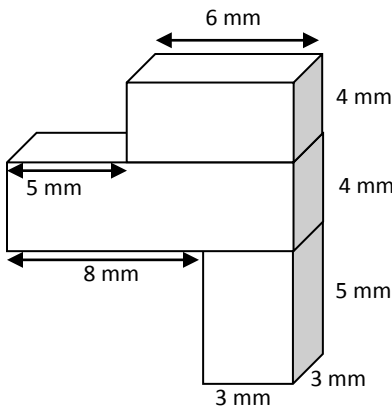
b.



Volume: _____

Solution Strategy:

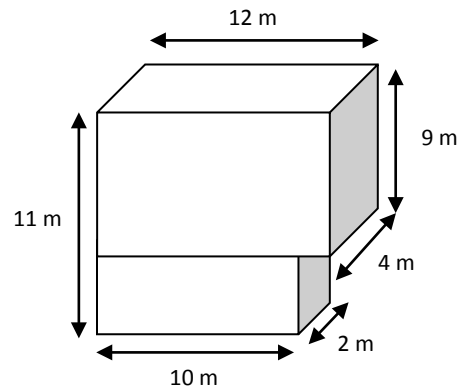
c.



Volume: _____

Solution Strategy:

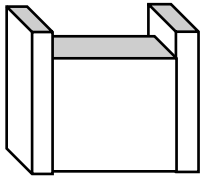
d.



Volume: _____

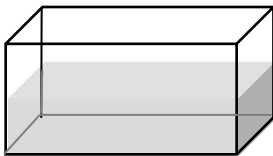
Solution Strategy:

2. A planting box (pictured below) is made of two sizes of rectangular prisms. One type of prism measures 3 inches by 6 inches by 14 inches. The other type measures 15 inches by 5 inches by 10 inches. What is the total volume of three such boxes?



3. The combined volume of two identical cubes is 250 cubic centimeters. What is the measure of one cube's edge?

4. A fish tank has a base area of 45 cm^2 and is filled with water to a depth of 12 cm. If the height of the tank is 25 cm, how much more water will be needed to fill the tank to the brim?



5. Three rectangular prisms have a combined volume of 518 cubic feet. Prism A has one-third the volume of Prism B, and Prisms B and C have equal volume. What is the volume of each prism?

Name _____

Date _____

Wren makes some rectangular display boxes.

1. Wren’s first display box is 6 inches long, 9 inches wide, and 4 inches high. What is the volume of the display box? Explain your work using a diagram.

2. Wren wants to put some artwork into three shadow boxes. She knows they all need a volume of 60 cubic inches, but she wants them all to be different. Show three different ways Wren can make these boxes by drawing diagrams and labeling the measurements.

Shadow Box A	Shadow Box B
Shadow Box C	

3. Wren wants to build a box to organize her scrapbook supplies. She has a stencil set that is 12 inches wide that needs to lay flat in the bottom of the box. The supply box must also be no taller than 2 feet. Name one way she could build a supply box with a volume of 72 cubic inches.
4. After all of this organizing, Wren decides she also needs more storage for her soccer equipment. Her current storage box measures 1 foot long by 2 feet wide by 2 feet high. She realizes she needs to replace it with a box with 12 cubic feet of storage, so she doubles the width.
- Will she achieve her goal if she does this? Why or why not?
 - If she wants to keep the height the same, what could the other dimensions be for a 12-cubic-foot storage box?
 - If she uses the dimensions in Part (b), what is the area of the new storage box's floor?
 - How has the area of the bottom in her new storage box changed? Explain how you know.

Name _____

Date _____

1. I have a prism with the dimensions of 6 cm by 12 cm by 15 cm. Calculate the volume of the prism, and then give the dimensions of three different prisms that each have $\frac{1}{3}$ of the volume.

	Length	Width	Height	Volume
Original Prism	6 cm	12 cm	15 cm	
Prism 1				
Prism 2				
Prism 3				

2. Sunni’s bedroom has the dimensions of 11 ft by 10 ft by 10 ft. Her den has the same height but double the volume. Give two sets of the possible dimensions of the den and the volume of the den.

Name _____

Date _____

1. Find three rectangular prisms around your house. Describe the item you are measuring (cereal box, tissue box, etc.), and then measure each dimension to the nearest whole inch and calculate the volume.

a. Rectangular Prism A

Item:

Height: _____ inches

Length: _____ inches

Width: _____ inches

Volume: _____ cubic inches

b. Rectangular Prism B

Item:

Height: _____ inches

Length: _____ inches

Width: _____ inches

Volume: _____ cubic inches

c. Rectangular Prism C

Item:

Height: _____ inches

Length: _____ inches

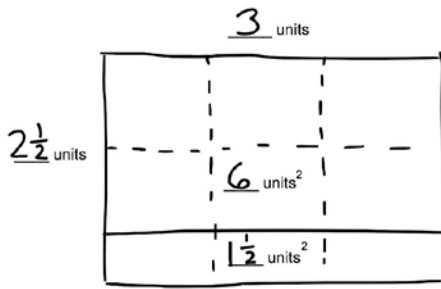
Width: _____ inches

Volume: _____ cubic inches

Name _____ Date _____

1. John tiled some rectangles using square units. Sketch the rectangles if necessary. Fill in the missing information, and then confirm the area by multiplying.

a. Rectangle A:

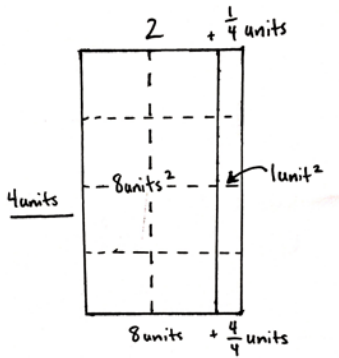


Rectangle A is

3 units long $2\frac{1}{2}$ units wide

Area = _____ units²

b. Rectangle B:



Rectangle B is

_____ units long _____ units wide

Area = _____ units²

c. Rectangle C:

Rectangle C is

$\frac{3}{4}$ units long 4 units wide

Area = _____ units²

d. **Rectangle D:**

Rectangle D is

2 units long $1\frac{3}{4}$ units wide

Area = _____ units²

2. Rachel made a mosaic from different color rectangular tiles. Three tiles measured $3\frac{1}{2}$ inches \times 3 inches. Six tiles measured 4 inches \times $3\frac{1}{4}$ inches. What is the area of the whole mosaic in square inches?

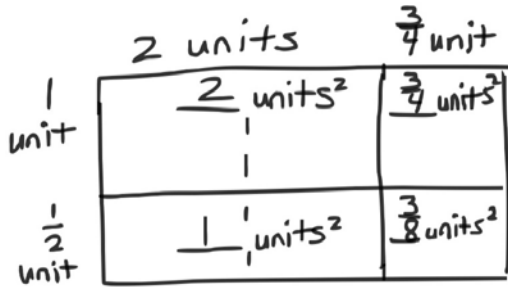
3. A garden box has a perimeter of $27\frac{1}{2}$ feet. If the length is 9 feet, what is the area of the garden box?

Name _____

Date _____

1. Kristen tiled the following rectangles using square units. Sketch the rectangles, and find the areas. Then, confirm the area by multiplying. Rectangle A has been sketched for you.

a. **Rectangle A:**



Rectangle A is

_____ units long \times _____ units wide

Area = _____ units²

b. **Rectangle B:**

Rectangle B is

$2\frac{1}{2}$ units long \times $\frac{3}{4}$ unit wide

Area = _____ units²

c. **Rectangle C:**

Rectangle C is

$3\frac{1}{3}$ units long \times $2\frac{1}{2}$ units wide

Area = _____ units²

d. **Rectangle D:**

Rectangle D is

$3\frac{1}{2}$ units long \times $2\frac{1}{4}$ units wide

Area = _____ units²

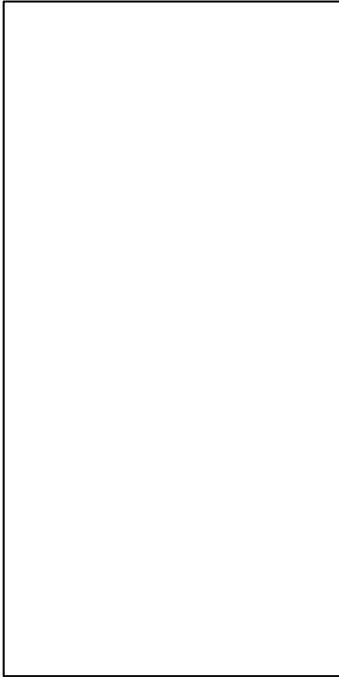
2. A square has a perimeter of 25 inches. What is the area of the square?

Name _____

Date _____

1. Measure each rectangle with your inch ruler, and label the dimensions. Use the area model to find the area.

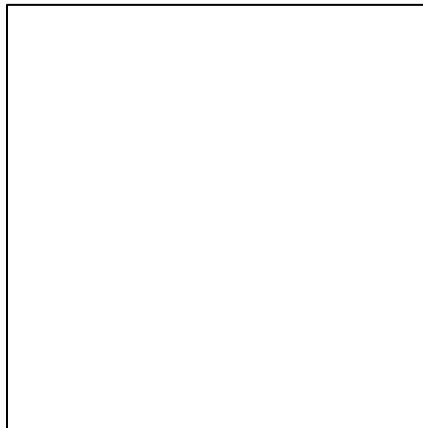
a.



b.



c.



d.



e.



2. Find the area of rectangles with the following dimensions. Explain your thinking using the area model.

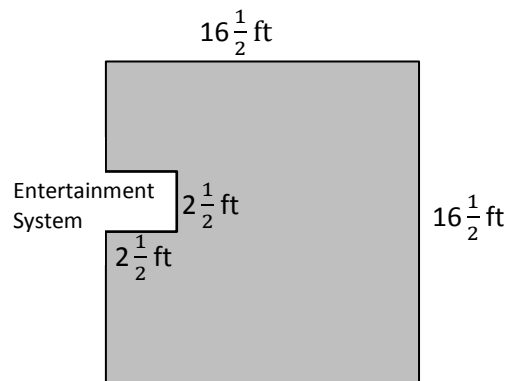
a. $2\frac{1}{4} \text{ yd} \times \frac{1}{4} \text{ yd}$

b. $2\frac{1}{2} \text{ ft} \times 1\frac{1}{4} \text{ ft}$

3. Kelly buys a tarp to cover the area under her tent. The tent is 4 feet wide and has an area of 31 square feet. The tarp she bought is $5\frac{1}{3}$ feet by $5\frac{3}{4}$ feet. Can the tarp cover the area under Kelly’s tent? Draw a model to show your thinking.

4. Shannon and Leslie want to carpet a $16\frac{1}{2}$ ft by $16\frac{1}{2}$ ft square room. They can’t put carpet under an entertainment system that juts out. (See the drawing below.)

a. In square feet, what is the area of the space with no carpet?



b. How many square feet of carpet will Shannon and Leslie need to buy?

Name _____ Date _____

1. Find the area of the following rectangles. Draw an area model if it helps you.

a. $\frac{8}{3} \text{ cm} \times \frac{24}{4} \text{ cm}$

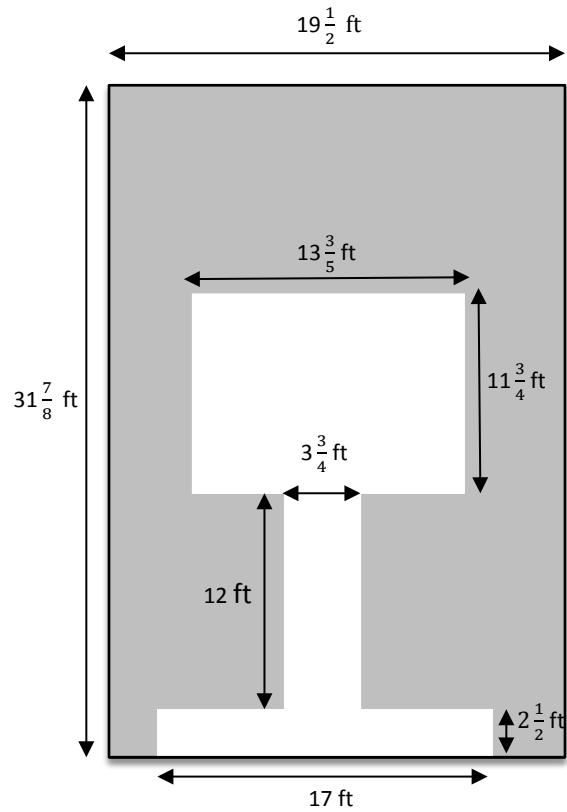
b. $\frac{32}{5} \text{ ft} \times 3\frac{3}{8} \text{ ft}$

c. $5\frac{4}{6} \text{ in} \times 4\frac{3}{5} \text{ in}$

d. $\frac{5}{7} \text{ m} \times 6\frac{3}{5} \text{ m}$

2. Chris is making a table top from some leftover tiles. He has 9 tiles that measure $3\frac{1}{8}$ inches long and $2\frac{3}{4}$ inches wide. What is the area he can cover with these tiles?

3. A hotel is recarpeting a section of the lobby. Carpet covers the part of the floor as shown below in gray. How many square feet of carpeting will be needed?



3. A-Plus Glass is making windows for a new house that is being built. The box shows the list of sizes they must make.

15 windows $4\frac{3}{4}$ ft long and $3\frac{3}{5}$ ft wide

7 windows $2\frac{4}{5}$ ft wide and $6\frac{1}{2}$ ft long

How many square feet of glass will they need?

4. Mr. Johnson needs to buy seed for his backyard lawn.
- If the lawn measures $40\frac{4}{5}$ ft by $50\frac{7}{8}$ ft, how many square feet of seed will he need?
 - One bag of seed will cover 500 square feet if he sets his seed spreader to its lowest setting and 300 square feet if he sets the spreader to its highest setting. How many bags of seed will he need if he uses the highest setting? The lowest setting?

Name _____

Date _____

1. The width of a picnic table is 3 times its length. If the length is $\frac{5}{6}$ yd long, what is the area in square feet?

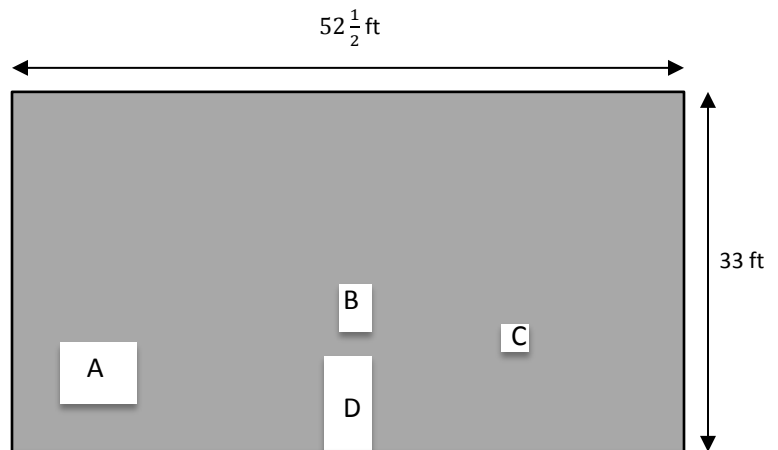
2. A painting company will paint this wall. The homeowner gives them the following dimensions:

Window A is $6\frac{1}{4}$ ft \times $5\frac{3}{4}$ ft.

Window B is $3\frac{1}{8}$ ft \times 4 ft.

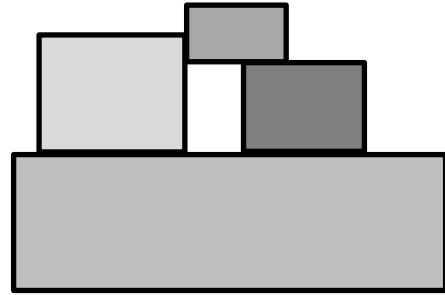
Window C is $9\frac{1}{2}$ ft².

Door D is 8 ft \times 4 ft.



What is the area of the painted part of the wall?

3. A decorative wooden piece is made up of four rectangles as shown to the right. The smallest rectangle measures $4\frac{1}{2}$ inches by $7\frac{3}{4}$ inches. If $2\frac{1}{4}$ inches are added to each dimension as the rectangles get larger, what is the total area of the entire piece?



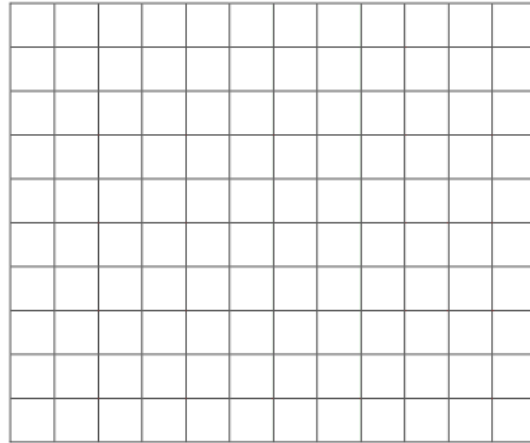
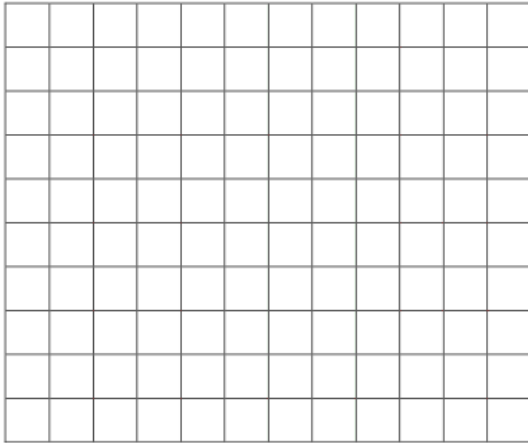
Name _____

Date _____

1. Use a straightedge and the grid paper to draw:

a. A trapezoid with exactly 2 right angles.

b. A trapezoid with no right angles.



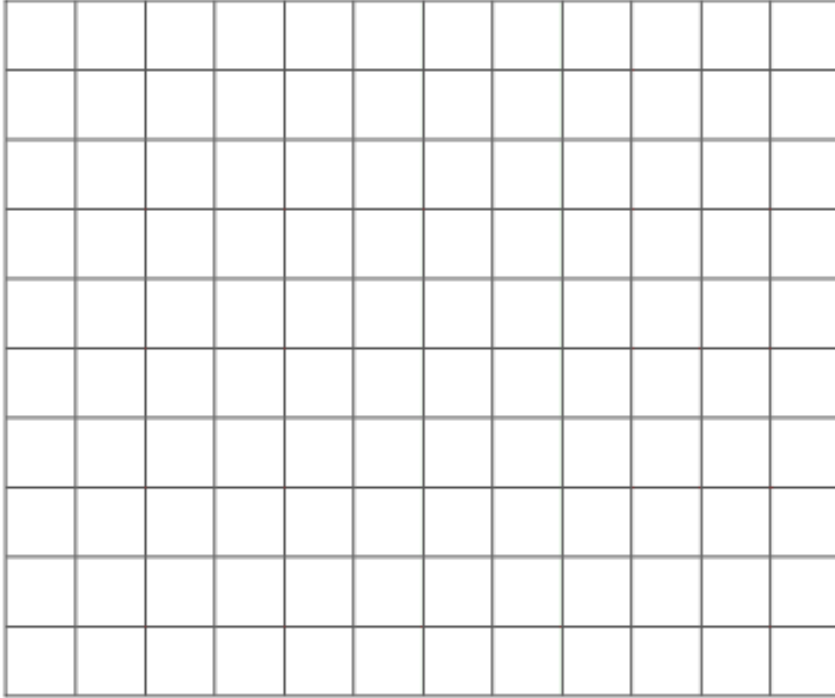
2. Kaplan incorrectly sorted some quadrilaterals into trapezoids and non-trapezoids as pictured below.

a. Circle the shapes that are in the wrong group, and tell why they are sorted incorrectly.

Trapezoids	Non-Trapezoids

b. Explain what tools would be necessary to use to verify the placement of all the trapezoids.

3. Use a straightedge to draw an isosceles trapezoid on the grid paper.

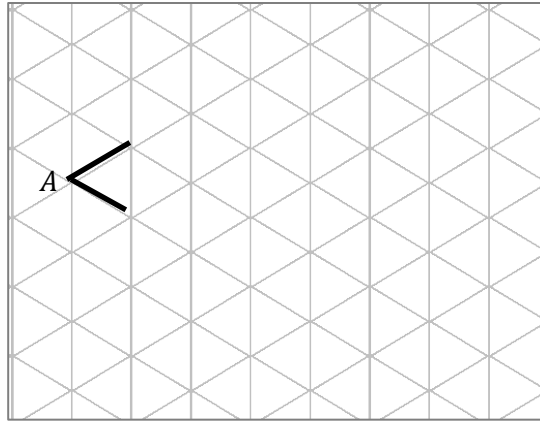


- a. Why is this shape called an isosceles trapezoid?

Name _____

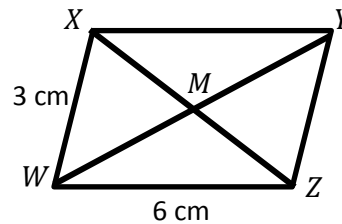
Date _____

1. $\angle A$ measures 60° .
 - a. Extend the rays of $\angle A$, and draw parallelogram $ABCD$ on the grid paper.



- b. What are the measures of $\angle B$, $\angle C$, and $\angle D$?

2. $WXYZ$ is a parallelogram not drawn to scale.
 - a. Using what you know about parallelograms, give the measure of sides XY and YZ .



- b. $\angle WXY = 113^\circ$. Use what you know about angles in a parallelogram to find the measure of the other angles.

$\angle XYZ = \underline{\hspace{2cm}}^\circ$

$\angle YZW = \underline{\hspace{2cm}}^\circ$

$\angle ZWX = \underline{\hspace{2cm}}^\circ$

3. Jack measured some segments in Problem 2. He found that $\overline{WY} = 8$ cm and $\overline{MZ} = 3$ cm. Give the lengths of the following segments:

$WM = \underline{\hspace{2cm}}$ cm

$MY = \underline{\hspace{2cm}}$ cm

$XM = \underline{\hspace{2cm}}$ cm

$XZ = \underline{\hspace{2cm}}$ cm

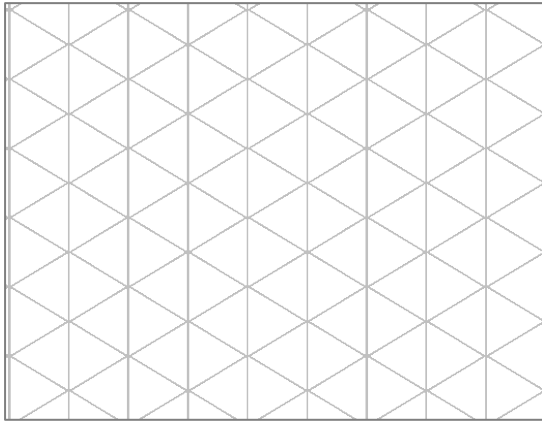
4. Using the properties of shapes, explain why all parallelograms are trapezoids.
5. Teresa says that because the diagonals of a parallelogram bisect each other, if one diagonal is 4.2 cm, the other diagonal must be half that length. Use words and pictures to explain Teresa's error.

Name _____

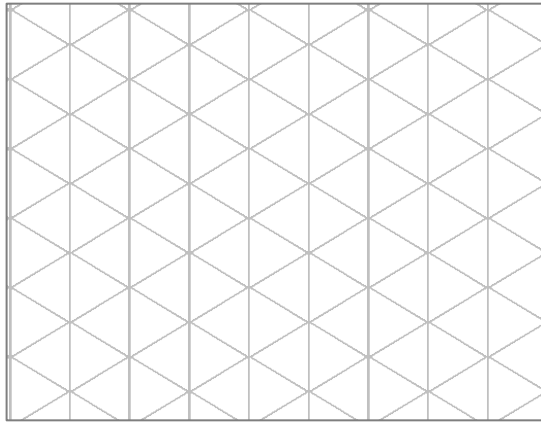
Date _____

1. Use the grid paper to draw.

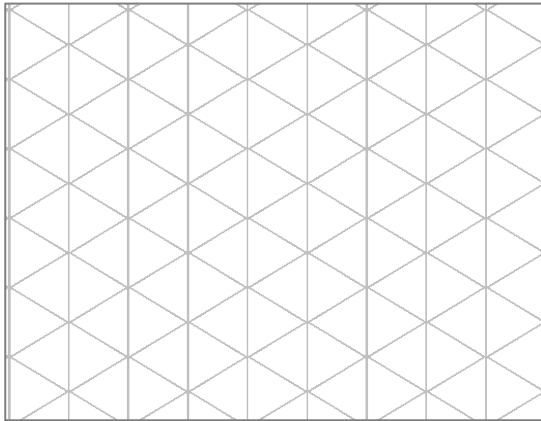
a. A rhombus with no right angles.



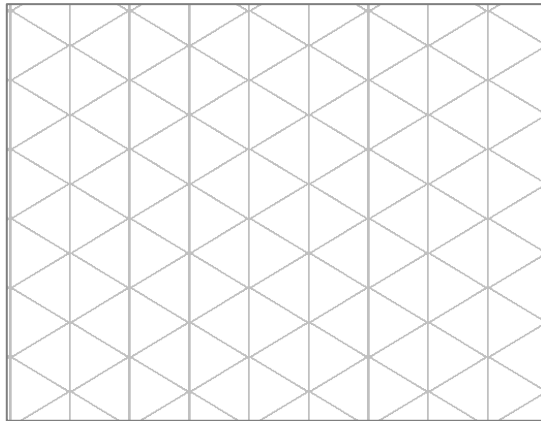
b. A rhombus with 4 right angles.



c. A rectangle with not all sides equal.



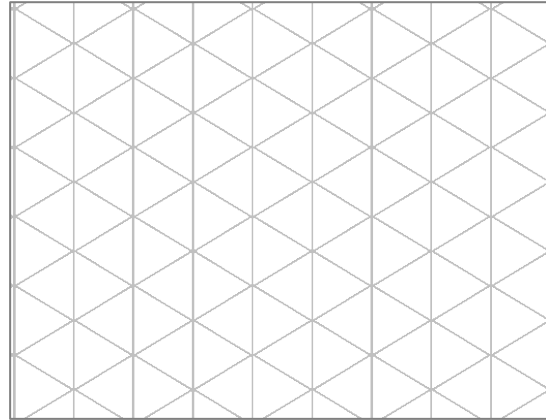
d. A rectangle with all sides equal.



Name _____

Date _____

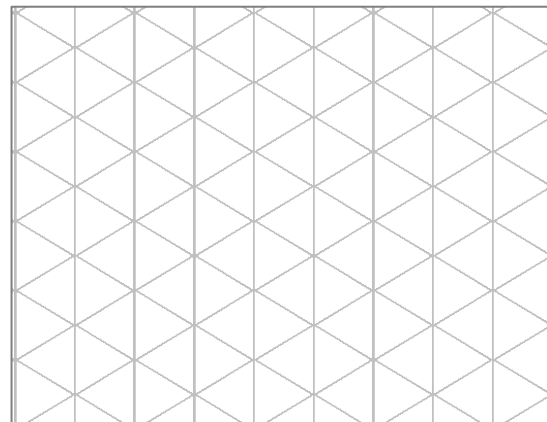
1.
 - a. Draw a kite that is not a parallelogram on the grid paper.
 - b. List all the properties of a kite.



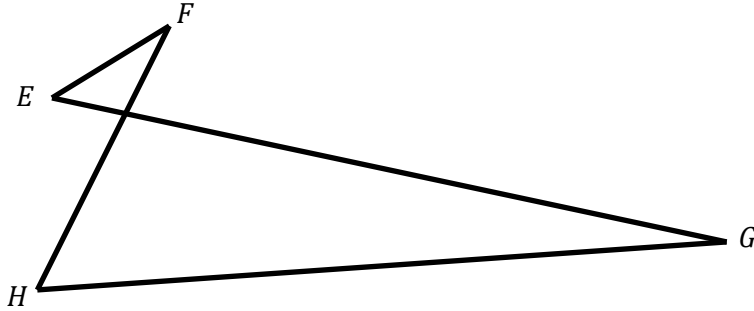
- c. When can a parallelogram also be a kite?

2. If rectangles must have right angles, explain how a rhombus could also be called a rectangle.

3. Draw a rhombus that is also a rectangle on the grid paper.



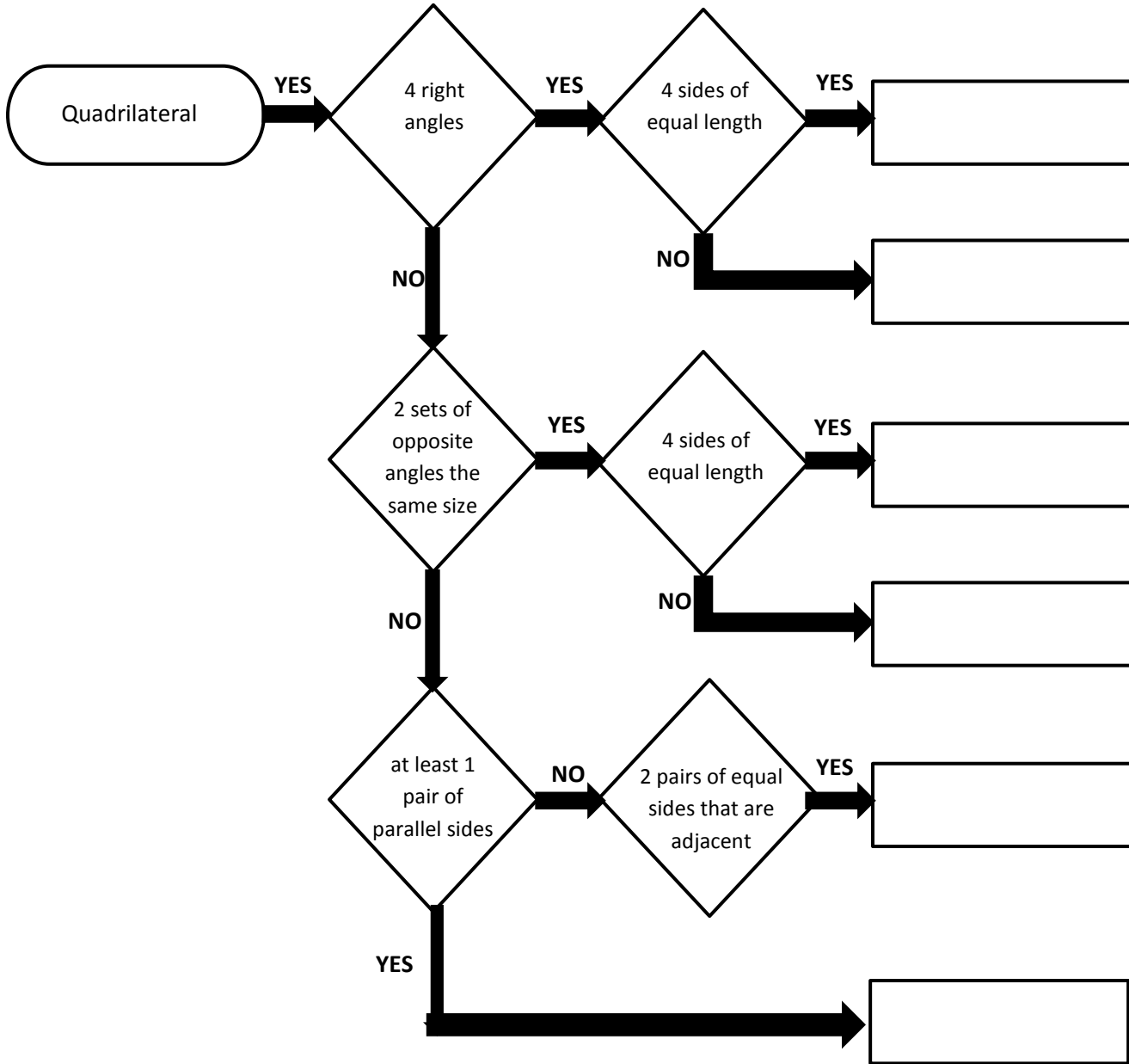
4. Kirkland says that figure $EFGH$ below is a quadrilateral because it has four points in the same plane and four segments with no three endpoints collinear. Explain his error.



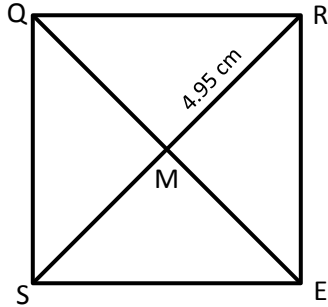
Name _____

Date _____

1. Follow the flow chart, and put the name of the figure in the boxes.



2. $SQRE$ is a square with an area of 49 cm^2 , and $RM = 4.95 \text{ cm}$. Find the measurements using what you know about the properties of squares.



- $RS =$ _____ cm
- $QE =$ _____ cm
- Perimeter = _____ cm
- $m\angle QRE =$ _____ $^\circ$
- $m\angle RMQ =$ _____ $^\circ$

Name _____

Date _____

1. Answer the questions by checking the box.

Sometimes **Always**

- a. Is a square a rectangle?
- b. Is a rectangle a kite?
- c. Is a rectangle a parallelogram?
- d. Is a square a trapezoid?
- e. Is a parallelogram a trapezoid?
- f. Is a trapezoid a parallelogram?
- g. Is a kite a parallelogram?

	Sometimes	Always
a. Is a square a rectangle?		
b. Is a rectangle a kite?		
c. Is a rectangle a parallelogram?		
d. Is a square a trapezoid?		
e. Is a parallelogram a trapezoid?		
f. Is a trapezoid a parallelogram?		
g. Is a kite a parallelogram?		

h. For each statement that you answered with *sometimes*, draw and label an example that justifies your answer.

2. Use what you know about quadrilaterals to answer each question below.

- a. Explain when a trapezoid is not a parallelogram. Sketch an example.

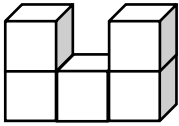
- b. Explain when a kite is not a parallelogram. Sketch an example.

Name _____

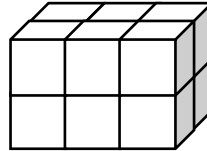
Date _____

1. What is the volume of the figures pictured below?

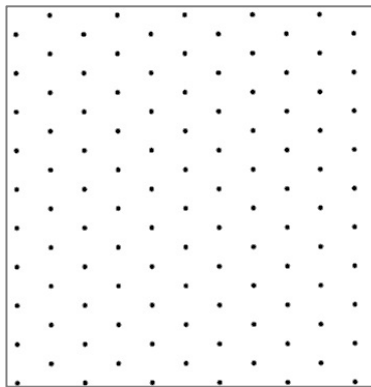
a.



b.



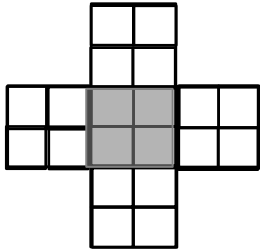
2. Draw a picture of a figure with a volume of 3 cubic units on the dot paper.



Name _____

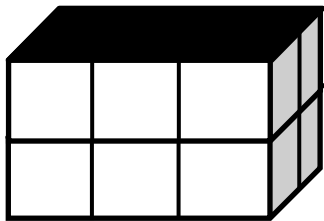
Date _____

1. If this net were to be folded into a box, how many cubes would fill it?



Number of cubes: _____

2. Predict how many centimeter cubes will fit in the box, and briefly explain your prediction. Use cubes to find the actual volume. (The figure is not drawn to scale.)



Prediction: _____

Actual: _____

Name _____

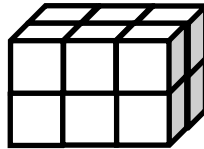
Date _____

1. Use unit cubes to build the figure to the right and fill in the missing information.

Number of layers: _____

Number of cubes in each layer: _____

Volume: _____ cubic centimeters

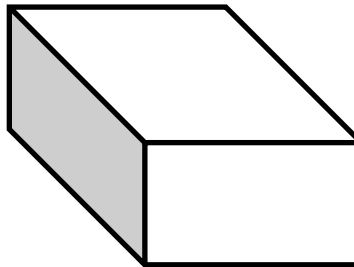


2. This prism measures 3 units by 4 units by 2 units. Draw the layers as indicated.

Number of layers: 4

Number of cubic units in each layer: 6

Volume: _____ cubic centimeters

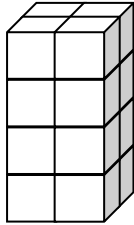


Name _____

Date _____

Calculate the volume of each prism.

a.



Length: _____ mm

Width: _____ mm

Height: _____ mm

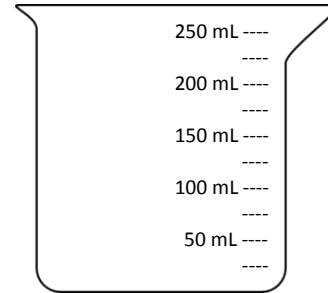
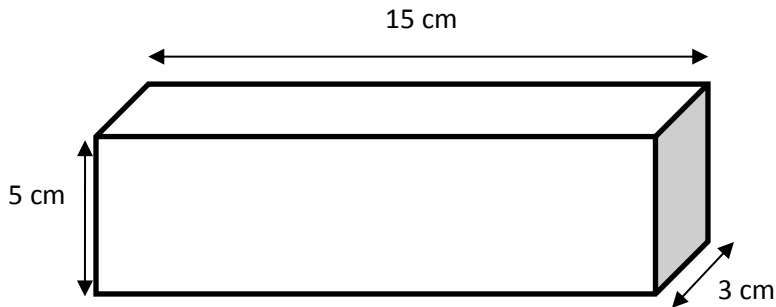
Volume: _____ mm³

Write the multiplication sentence that shows how you calculated the volume. Be sure to include the units.

- b. A rectangular prism has a top face with an area of 20 ft² and a height of 5 ft. What is the volume of this rectangular prism?

Name _____

Date _____



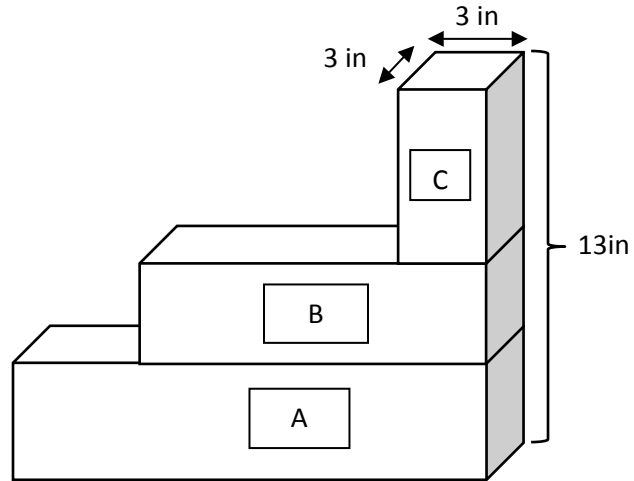
- a. Find the volume of the prism.

- b. Shade the beaker to show how much liquid would fill the box.

Name _____

Date _____

Find the total volume of soil in the three planters. Planter A is 14 inches by 3 inches by 4 inches. Planter B is 9 inches by 3 inches by 3 inches.



Name _____

Date _____

A storage shed is a rectangular prism and has dimensions of 6 meters by 5 meters by 12 meters. If Jean were to double these dimensions, she believes she would only double the volume. Is she correct? Explain why or why not. Include a drawing in your explanation.

Name _____

Date _____

Sketch a rectangular prism that has a volume of 36 cubic cm. Label the dimensions of each side on the prism. Fill in the blanks that follow.

Height: _____ cm

Length: _____ cm

Width: _____ cm

Volume: _____ cubic cm

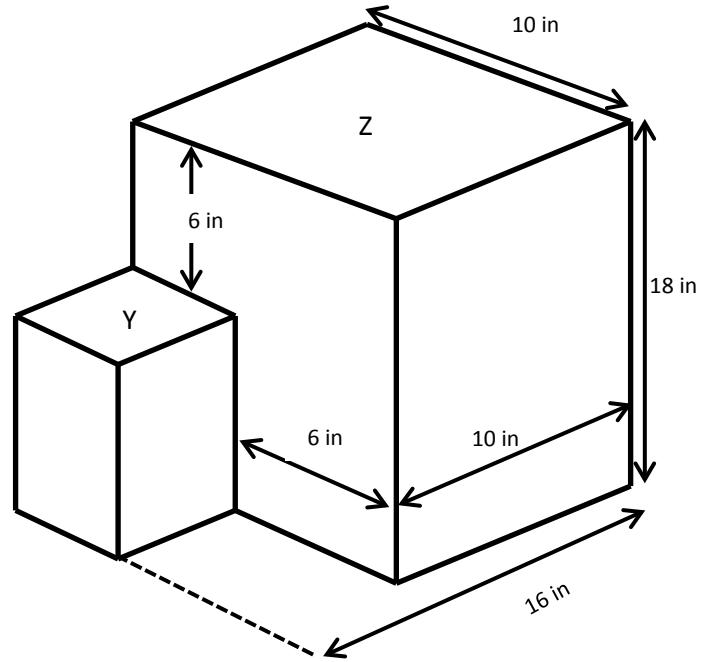
Name _____

Date _____

A student designed this sculpture. Using the dimensions on the sculpture, find the dimensions of each rectangular prism. Then, calculate the volume of each prism.

a. Rectangular Prism Y

Height: _____ inches
 Length: _____ inches
 Width: _____ inches
 Volume: _____ cubic inches



b. Rectangular Prism Z

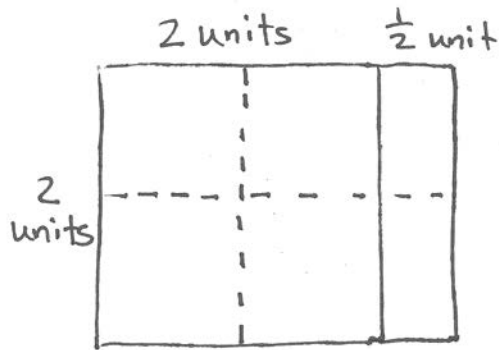
Height: _____ inches
 Length: _____ inches
 Width: _____ inches
 Volume: _____ cubic inches

c. Find the total volume of the sculpture. Label the answer.

Name _____

Date _____

Emma tiled a rectangle and then sketched her work. Fill in the missing information, and multiply to find the area.



Emma's Rectangle:

_____ units long _____ units wide

Area = _____ units²

Name _____

Date _____

To find the area, Andrea tiled a rectangle and sketched her answer. Sketch Andrea's rectangle, and find the area. Show your multiplication work.

Rectangle is

$$2\frac{1}{2} \text{ units} \times 2\frac{1}{2} \text{ units}$$

Area = _____

Name _____

Date _____

Measure the rectangle with your inch ruler, and label the dimensions. Find the area.



Name _____

Date _____

Find the area of the following rectangles. Draw an area model if it helps you.

1. $\frac{7}{2} \text{ mm} \times \frac{14}{5} \text{ mm}$

2. $5\frac{7}{8} \text{ km} \times \frac{18}{4} \text{ km}$

Name _____

Date _____

Mr. Klimek made his wife a rectangular vegetable garden. The width is $5\frac{3}{4}$ ft, and the length is $9\frac{4}{5}$ ft. What is the area of the garden?

Name _____

Date _____

Wheat grass is grown in planters that are $3\frac{1}{2}$ inch by $1\frac{3}{4}$ inch. If there is a 6×6 array of these planters with no space between them, what is the area covered by the planters?

Name _____

Date _____

1. a. Use a ruler and a set square to draw a trapezoid.

b. What attribute must be present for a quadrilateral to also be a trapezoid?

Name _____

Date _____

1. Draw a parallelogram.

2. When is a trapezoid also called a parallelogram?

Name _____

Date _____

1. Draw a rhombus.

2. Draw a rectangle.

Name _____

Date _____

1. List the property that must be present to call a rectangle a square.

2. Excluding rhombuses and squares, explain the difference between parallelograms and kites.

Name _____

Date _____

Use your tools to draw a square in the space below. Then, fill in the blanks with an attribute. There is more than one answer to some of these.

- a. Because a square is a kite, it must have _____.
- b. Because a square is a rhombus, it must have _____.
- c. Because a square is a rectangle, it must have _____.
- d. Because a square is a parallelogram, it must have _____.
- e. Because a square is a trapezoid, it must have _____.
- f. Because a square is a quadrilateral, it must have _____.

Name _____

Date _____

1. Use the word bank to fill in the blanks.

trapezoids parallelograms

All _____ are _____, but not all _____ are _____.

2. Use the word bank to fill in the blanks.

kites rhombuses

All _____ are _____, but not all _____ are _____.

A

Correct _____

Solve.

1	$\frac{1}{5} \times 2 =$		23	$\frac{5}{6} \times 12 =$	
2	$\frac{1}{5} \times 3 =$		24	$\frac{1}{3} \times 15 =$	
3	$\frac{1}{5} \times 4 =$		25	$\frac{2}{3} \times 15 =$	
4	$4 \times \frac{1}{5} =$		26	$15 \times \frac{2}{3} =$	
5	$\frac{1}{8} \times 3 =$		27	$\frac{1}{5} \times 15 =$	
6	$\frac{1}{8} \times 5 =$		28	$\frac{2}{5} \times 15 =$	
7	$\frac{1}{8} \times 7 =$		29	$\frac{4}{5} \times 15 =$	
8	$7 \times \frac{1}{8} =$		30	$\frac{3}{5} \times 15 =$	
9	$3 \times \frac{1}{10} =$		31	$15 \times \frac{3}{5} =$	
10	$7 \times \frac{1}{10} =$		32	$18 \times \frac{1}{6} =$	
11	$\frac{1}{10} \times 7 =$		33	$18 \times \frac{5}{6} =$	
12	$4 \div 2 =$		34	$\frac{5}{6} \times 18 =$	
13	$4 \times \frac{1}{2} =$		35	$24 \times \frac{1}{4} =$	
14	$6 \div 3 =$		36	$\frac{3}{4} \times 24 =$	
15	$\frac{1}{3} \times 6 =$		37	$32 \times \frac{1}{8} =$	
16	$10 \div 5 =$		38	$32 \times \frac{3}{8} =$	
17	$10 \times \frac{1}{5} =$		39	$\frac{5}{8} \times 32 =$	
18	$\frac{1}{3} \times 9 =$		40	$32 \times \frac{7}{8} =$	
19	$\frac{2}{3} \times 9 =$		41	$\frac{5}{9} \times 54 =$	
20	$\frac{1}{4} \times 8 =$		42	$63 \times \frac{7}{9} =$	
21	$\frac{3}{4} \times 8 =$		43	$56 \times \frac{3}{7} =$	
22	$\frac{1}{6} \times 12 =$		44	$\frac{6}{7} \times 49 =$	

B Improvement _____ # Correct _____

Solve.

1	$\frac{1}{7} \times 2 =$		23	$\frac{3}{4} \times 8 =$	
2	$\frac{1}{7} \times 3 =$		24	$\frac{1}{5} \times 15 =$	
3	$\frac{1}{7} \times 4 =$		25	$\frac{2}{5} \times 15 =$	
4	$4 \times \frac{1}{7} =$		26	$\frac{4}{5} \times 15 =$	
5	$\frac{1}{10} \times 3 =$		27	$\frac{3}{5} \times 15 =$	
6	$\frac{1}{10} \times 7 =$		28	$15 \times \frac{3}{5} =$	
7	$\frac{1}{10} \times 9 =$		29	$\frac{1}{3} \times 15 =$	
8	$9 \times \frac{1}{10} =$		30	$\frac{2}{3} \times 15 =$	
9	$3 \times \frac{1}{8} =$		31	$15 \times \frac{2}{3} =$	
10	$5 \times \frac{1}{8} =$		32	$24 \times \frac{1}{6} =$	
11	$\frac{1}{8} \times 5 =$		33	$24 \times \frac{5}{6} =$	
12	$10 \div 5 =$		34	$\frac{5}{6} \times 24 =$	
13	$10 \times \frac{1}{5} =$		35	$20 \times \frac{1}{4} =$	
14	$9 \div 3 =$		36	$\frac{3}{4} \times 20 =$	
15	$\frac{1}{3} \times 9 =$		37	$24 \times \frac{1}{8} =$	
16	$10 \div 2 =$		38	$24 \times \frac{3}{8} =$	
17	$10 \times \frac{1}{2} =$		39	$\frac{5}{8} \times 24 =$	
18	$\frac{1}{3} \times 6 =$		40	$24 \times \frac{7}{8} =$	
19	$\frac{2}{3} \times 6 =$		41	$\frac{5}{9} \times 63 =$	
20	$\frac{1}{6} \times 12 =$		42	$54 \times \frac{7}{9} =$	
21	$\frac{5}{6} \times 12 =$		43	$49 \times \frac{3}{7} =$	
22	$\frac{1}{4} \times 8 =$		44	$\frac{6}{7} \times 56 =$	

A

Correct _____

Multiply, but don't simplify.

1	$\frac{1}{2} \times \frac{1}{2} =$		23	$\frac{2}{5} \times \frac{5}{3} =$	
2	$\frac{1}{2} \times \frac{1}{3} =$		24	$\frac{3}{5} \times \frac{5}{2} =$	
3	$\frac{1}{2} \times \frac{1}{4} =$		25	$\frac{1}{3} \times \frac{1}{3} =$	
4	$\frac{1}{2} \times \frac{1}{7} =$		26	$\frac{1}{3} \times \frac{2}{3} =$	
5	$\frac{1}{7} \times \frac{1}{2} =$		27	$\frac{2}{3} \times \frac{2}{3} =$	
6	$\frac{1}{3} \times \frac{1}{2} =$		28	$\frac{2}{3} \times \frac{3}{2} =$	
7	$\frac{1}{3} \times \frac{1}{3} =$		29	$\frac{2}{3} \times \frac{4}{3} =$	
8	$\frac{1}{3} \times \frac{1}{6} =$		30	$\frac{2}{3} \times \frac{5}{3} =$	
9	$\frac{1}{3} \times \frac{1}{5} =$		31	$\frac{3}{2} \times \frac{3}{5} =$	
10	$\frac{1}{5} \times \frac{1}{3} =$		32	$\frac{3}{4} \times \frac{1}{5} =$	
11	$\frac{1}{5} \times \frac{2}{3} =$		33	$\frac{3}{4} \times \frac{4}{5} =$	
12	$\frac{2}{5} \times \frac{2}{3} =$		34	$\frac{3}{4} \times \frac{5}{5} =$	
13	$\frac{1}{4} \times \frac{1}{3} =$		35	$\frac{3}{4} \times \frac{6}{5} =$	
14	$\frac{1}{4} \times \frac{2}{3} =$		36	$\frac{1}{4} \times \frac{6}{5} =$	
15	$\frac{3}{4} \times \frac{2}{3} =$		37	$\frac{1}{7} \times \frac{1}{7} =$	
16	$\frac{1}{6} \times \frac{1}{3} =$		38	$\frac{1}{8} \times \frac{3}{5} =$	
17	$\frac{5}{6} \times \frac{1}{3} =$		39	$\frac{5}{6} \times \frac{1}{4} =$	
18	$\frac{5}{6} \times \frac{2}{3} =$		40	$\frac{3}{4} \times \frac{3}{4} =$	
19	$\frac{5}{4} \times \frac{2}{3} =$		41	$\frac{2}{3} \times \frac{6}{6} =$	
20	$\frac{1}{5} \times \frac{1}{5} =$		42	$\frac{3}{4} \times \frac{6}{2} =$	
21	$\frac{2}{5} \times \frac{2}{5} =$		43	$\frac{7}{8} \times \frac{7}{9} =$	
22	$\frac{2}{5} \times \frac{3}{5} =$		44	$\frac{7}{12} \times \frac{9}{8} =$	

B

Improvement _____

Correct _____

Multiply, but don't simplify.

1	$\frac{1}{2} \times \frac{1}{3} =$		23	$\frac{3}{5} \times \frac{5}{4} =$	
2	$\frac{1}{2} \times \frac{1}{4} =$		24	$\frac{4}{5} \times \frac{5}{3} =$	
3	$\frac{1}{2} \times \frac{1}{5} =$		25	$\frac{1}{4} \times \frac{1}{4} =$	
4	$\frac{1}{2} \times \frac{1}{9} =$		26	$\frac{1}{4} \times \frac{3}{4} =$	
5	$\frac{1}{9} \times \frac{1}{2} =$		27	$\frac{3}{4} \times \frac{3}{4} =$	
6	$\frac{1}{5} \times \frac{1}{2} =$		28	$\frac{3}{4} \times \frac{4}{3} =$	
7	$\frac{1}{5} \times \frac{1}{3} =$		29	$\frac{3}{4} \times \frac{5}{4} =$	
8	$\frac{1}{5} \times \frac{1}{7} =$		30	$\frac{3}{4} \times \frac{6}{4} =$	
9	$\frac{1}{5} \times \frac{1}{3} =$		31	$\frac{4}{3} \times \frac{4}{6} =$	
10	$\frac{1}{3} \times \frac{1}{5} =$		32	$\frac{2}{3} \times \frac{1}{5} =$	
11	$\frac{1}{3} \times \frac{2}{5} =$		33	$\frac{2}{3} \times \frac{4}{5} =$	
12	$\frac{2}{3} \times \frac{2}{5} =$		34	$\frac{2}{3} \times \frac{5}{5} =$	
13	$\frac{1}{3} \times \frac{1}{4} =$		35	$\frac{2}{3} \times \frac{6}{5} =$	
14	$\frac{1}{3} \times \frac{3}{4} =$		36	$\frac{1}{3} \times \frac{6}{5} =$	
15	$\frac{2}{3} \times \frac{3}{4} =$		37	$\frac{1}{9} \times \frac{1}{9} =$	
16	$\frac{1}{3} \times \frac{1}{6} =$		38	$\frac{1}{5} \times \frac{3}{8} =$	
17	$\frac{2}{3} \times \frac{1}{6} =$		39	$\frac{3}{4} \times \frac{1}{6} =$	
18	$\frac{2}{3} \times \frac{5}{6} =$		40	$\frac{2}{3} \times \frac{2}{3} =$	
19	$\frac{3}{2} \times \frac{3}{4} =$		41	$\frac{3}{4} \times \frac{8}{8} =$	
20	$\frac{1}{5} \times \frac{1}{5} =$		42	$\frac{2}{3} \times \frac{6}{3} =$	
21	$\frac{3}{5} \times \frac{3}{5} =$		43	$\frac{6}{7} \times \frac{8}{9} =$	
22	$\frac{3}{5} \times \frac{4}{5} =$		44	$\frac{7}{12} \times \frac{8}{7} =$	

A

Correct _____

Multiply.

1	$3 \times 2 =$		23	$0.6 \times 2 =$	
2	$3 \times 0.2 =$		24	$0.6 \times 0.2 =$	
3	$3 \times 0.02 =$		25	$0.6 \times 0.02 =$	
4	$3 \times 3 =$		26	$0.2 \times 0.06 =$	
5	$3 \times 0.3 =$		27	$5 \times 7 =$	
6	$3 \times 0.03 =$		28	$0.5 \times 7 =$	
7	$2 \times 4 =$		29	$0.5 \times 0.7 =$	
8	$2 \times 0.4 =$		30	$0.5 \times 0.07 =$	
9	$2 \times 0.04 =$		31	$0.7 \times 0.05 =$	
10	$5 \times 3 =$		32	$2 \times 8 =$	
11	$5 \times 0.3 =$		33	$9 \times 0.2 =$	
12	$5 \times 0.03 =$		34	$3 \times 7 =$	
13	$7 \times 2 =$		35	$8 \times 0.03 =$	
14	$7 \times 0.2 =$		36	$4 \times 6 =$	
15	$7 \times 0.02 =$		37	$0.6 \times 7 =$	
16	$4 \times 3 =$		38	$0.7 \times 0.7 =$	
17	$4 \times 0.3 =$		39	$0.8 \times 0.06 =$	
18	$0.4 \times 3 =$		40	$0.09 \times 0.6 =$	
19	$0.4 \times 0.3 =$		41	$6 \times 0.8 =$	
20	$0.4 \times 0.03 =$		42	$0.7 \times 0.9 =$	
21	$0.3 \times 0.04 =$		43	$0.08 \times 0.8 =$	
22	$6 \times 2 =$		44	$0.9 \times 0.08 =$	

B

Improvement _____

Correct _____

Multiply.

1	$4 \times 2 =$		23	$0.8 \times 2 =$	
2	$4 \times 0.2 =$		24	$0.8 \times 0.2 =$	
3	$4 \times 0.02 =$		25	$0.8 \times 0.02 =$	
4	$2 \times 3 =$		26	$0.2 \times 0.08 =$	
5	$2 \times 0.3 =$		27	$5 \times 9 =$	
6	$2 \times 0.03 =$		28	$0.5 \times 9 =$	
7	$3 \times 3 =$		29	$0.5 \times 0.9 =$	
8	$3 \times 0.3 =$		30	$0.5 \times 0.09 =$	
9	$3 \times 0.03 =$		31	$0.9 \times 0.05 =$	
10	$4 \times 3 =$		32	$2 \times 6 =$	
11	$4 \times 0.3 =$		33	$7 \times 0.2 =$	
12	$4 \times 0.03 =$		34	$3 \times 8 =$	
13	$9 \times 2 =$		35	$9 \times 0.03 =$	
14	$9 \times 0.2 =$		36	$4 \times 8 =$	
15	$9 \times 0.02 =$		37	$0.7 \times 6 =$	
16	$5 \times 3 =$		38	$0.6 \times 0.6 =$	
17	$5 \times 0.3 =$		39	$0.6 \times 0.08 =$	
18	$0.5 \times 3 =$		40	$0.06 \times 0.9 =$	
19	$0.5 \times 0.3 =$		41	$8 \times 0.6 =$	
20	$0.5 \times 0.03 =$		42	$0.9 \times 0.7 =$	
21	$0.3 \times 0.05 =$		43	$0.07 \times 0.7 =$	
22	$8 \times 2 =$		44	$0.8 \times 0.09 =$	

A

Correct _____

Divide.

1	$\frac{1}{2} \div 2 =$		23	$4 \div \frac{1}{4} =$	
2	$\frac{1}{2} \div 3 =$		24	$\frac{1}{3} \div 3 =$	
3	$\frac{1}{2} \div 4 =$		25	$\frac{2}{3} \div 3 =$	
4	$\frac{1}{2} \div 7 =$		26	$\frac{1}{4} \div 2 =$	
5	$7 \div \frac{1}{2} =$		27	$\frac{3}{4} \div 2 =$	
6	$6 \div \frac{1}{2} =$		28	$\frac{1}{5} \div 2 =$	
7	$5 \div \frac{1}{2} =$		29	$\frac{3}{5} \div 2 =$	
8	$3 \div \frac{1}{2} =$		30	$\frac{1}{6} \div 2 =$	
9	$2 \div \frac{1}{5} =$		31	$\frac{5}{6} \div 2 =$	
10	$3 \div \frac{1}{5} =$		32	$\frac{5}{6} \div 3 =$	
11	$4 \div \frac{1}{5} =$		33	$\frac{1}{6} \div 3 =$	
12	$7 \div \frac{1}{5} =$		34	$3 \div \frac{1}{6} =$	
13	$\frac{1}{5} \div 7 =$		35	$6 \div \frac{1}{6} =$	
14	$\frac{1}{3} \div 2 =$		36	$7 \div \frac{1}{7} =$	
15	$2 \div \frac{1}{3} =$		37	$8 \div \frac{1}{8} =$	
16	$\frac{1}{4} \div 2 =$		38	$9 \div \frac{1}{9} =$	
17	$2 \div \frac{1}{4} =$		39	$\frac{1}{8} \div 7 =$	
18	$\frac{1}{5} \div 2 =$		40	$9 \div \frac{1}{8} =$	
19	$2 \div \frac{1}{5} =$		41	$\frac{1}{8} \div 7 =$	
20	$3 \div \frac{1}{4} =$		42	$7 \div \frac{1}{6} =$	
21	$\frac{1}{4} \div 3 =$		43	$9 \div \frac{1}{7} =$	
22	$\frac{1}{4} \div 4 =$		44	$\frac{1}{8} \div 9 =$	

B Improvement _____ # Correct _____

Divide.

1	$\frac{1}{2} \div 2 =$		23	$3 \div \frac{1}{3} =$	
2	$\frac{1}{5} \div 3 =$		24	$\frac{1}{4} \div 4 =$	
3	$\frac{1}{5} \div 4 =$		25	$\frac{3}{4} \div 4 =$	
4	$\frac{1}{5} \div 7 =$		26	$\frac{1}{3} \div 3 =$	
5	$7 \div \frac{1}{5} =$		27	$\frac{2}{3} \div 3 =$	
6	$6 \div \frac{1}{5} =$		28	$\frac{1}{6} \div 2 =$	
7	$5 \div \frac{1}{5} =$		29	$\frac{5}{6} \div 2 =$	
8	$3 \div \frac{1}{5} =$		30	$\frac{1}{5} \div 5 =$	
9	$2 \div \frac{1}{2} =$		31	$\frac{3}{5} \div 5 =$	
10	$3 \div \frac{1}{2} =$		32	$\frac{3}{5} \div 4 =$	
11	$4 \div \frac{1}{2} =$		33	$\frac{1}{5} \div 6 =$	
12	$7 \div \frac{1}{2} =$		34	$6 \div \frac{1}{5} =$	
13	$\frac{1}{2} \div 7 =$		35	$6 \div \frac{1}{4} =$	
14	$\frac{1}{4} \div 2 =$		36	$7 \div \frac{1}{6} =$	
15	$2 \div \frac{1}{4} =$		37	$8 \div \frac{1}{7} =$	
16	$\frac{1}{3} \div 2 =$		38	$9 \div \frac{1}{8} =$	
17	$2 \div \frac{1}{3} =$		39	$\frac{1}{8} \div 8 =$	
18	$\frac{1}{2} \div 2 =$		40	$9 \div \frac{1}{9} =$	
19	$2 \div \frac{1}{2} =$		41	$\frac{1}{9} \div 8 =$	
20	$4 \div \frac{1}{3} =$		42	$7 \div \frac{1}{7} =$	
21	$\frac{1}{3} \div 4 =$		43	$9 \div \frac{1}{6} =$	
22	$\frac{1}{3} \div 3 =$		44	$\frac{1}{8} \div 6 =$	

A

Correct _____

Multiply.

1	$2 \times 10 =$		23	$33 \times 20 =$	
2	$12 \times 10 =$		24	$33 \times 200 =$	
3	$12 \times 100 =$		25	$24 \times 10 =$	
4	$4 \times 10 =$		26	$24 \times 20 =$	
5	$34 \times 10 =$		27	$24 \times 100 =$	
6	$34 \times 100 =$		28	$24 \times 200 =$	
7	$7 \times 10 =$		29	$23 \times 30 =$	
8	$27 \times 10 =$		30	$23 \times 300 =$	
9	$27 \times 100 =$		31	$71 \times 2 =$	
10	$3 \times 10 =$		32	$71 \times 20 =$	
11	$3 \times 2 =$		33	$14 \times 2 =$	
12	$3 \times 20 =$		34	$14 \times 3 =$	
13	$13 \times 10 =$		35	$14 \times 30 =$	
14	$13 \times 2 =$		36	$14 \times 300 =$	
15	$13 \times 20 =$		37	$82 \times 20 =$	
16	$13 \times 100 =$		38	$15 \times 300 =$	
17	$13 \times 200 =$		39	$71 \times 600 =$	
18	$2 \times 4 =$		40	$18 \times 40 =$	
19	$22 \times 4 =$		41	$75 \times 30 =$	
20	$22 \times 40 =$		42	$84 \times 300 =$	
21	$22 \times 400 =$		43	$87 \times 60 =$	
22	$33 \times 2 =$		44	$79 \times 800 =$	

B Improvement _____ # Correct _____

Multiply.

1	$3 \times 10 =$		23	$44 \times 20 =$	
2	$13 \times 10 =$		24	$44 \times 200 =$	
3	$13 \times 100 =$		25	$42 \times 10 =$	
4	$5 \times 10 =$		26	$42 \times 20 =$	
5	$35 \times 10 =$		27	$42 \times 100 =$	
6	$35 \times 100 =$		28	$42 \times 200 =$	
7	$8 \times 10 =$		29	$32 \times 30 =$	
8	$28 \times 10 =$		30	$32 \times 300 =$	
9	$28 \times 100 =$		31	$81 \times 2 =$	
10	$4 \times 10 =$		32	$81 \times 20 =$	
11	$4 \times 2 =$		33	$13 \times 3 =$	
12	$4 \times 20 =$		34	$13 \times 4 =$	
13	$14 \times 10 =$		35	$13 \times 40 =$	
14	$14 \times 2 =$		36	$13 \times 400 =$	
15	$14 \times 20 =$		37	$72 \times 30 =$	
16	$14 \times 100 =$		38	$15 \times 300 =$	
17	$14 \times 200 =$		39	$81 \times 600 =$	
18	$2 \times 3 =$		40	$16 \times 40 =$	
19	$22 \times 3 =$		41	$65 \times 30 =$	
20	$22 \times 30 =$		42	$48 \times 300 =$	
21	$22 \times 300 =$		43	$89 \times 60 =$	
22	$44 \times 2 =$		44	$76 \times 800 =$	

A

Correct _____

Divide.

1	$30 \div 10 =$	23	$480 \div 4 =$
2	$430 \div 10 =$	24	$480 \div 40 =$
3	$4,300 \div 10 =$	25	$6,300 \div 3 =$
4	$4,300 \div 100 =$	26	$6,300 \div 30 =$
5	$43,000 \div 100 =$	27	$6,300 \div 300 =$
6	$50 \div 10 =$	28	$8,400 \div 2 =$
7	$850 \div 10 =$	29	$8,400 \div 20 =$
8	$8,500 \div 10 =$	30	$8,400 \div 200 =$
9	$8,500 \div 100 =$	31	$96,000 \div 3 =$
10	$85,000 \div 100 =$	32	$96,000 \div 300 =$
11	$600 \div 10 =$	33	$96,000 \div 30 =$
12	$60 \div 3 =$	34	$900 \div 30 =$
13	$600 \div 30 =$	35	$1,200 \div 30 =$
14	$4,000 \div 100 =$	36	$1,290 \div 30 =$
15	$40 \div 2 =$	37	$1,800 \div 300 =$
16	$4,000 \div 200 =$	38	$8,000 \div 200 =$
17	$240 \div 10 =$	39	$12,000 \div 200 =$
18	$24 \div 2 =$	40	$12,800 \div 200 =$
19	$240 \div 20 =$	41	$2,240 \div 70 =$
20	$3,600 \div 100 =$	42	$18,400 \div 800 =$
21	$36 \div 3 =$	43	$21,600 \div 90 =$
22	$3,600 \div 300 =$	44	$25,200 \div 600 =$

B Improvement _____ # Correct _____

Divide.

1	$20 \div 10 =$	23	$840 \div 4 =$
2	$420 \div 10 =$	24	$840 \div 40 =$
3	$4,200 \div 10 =$	25	$3,600 \div 3 =$
4	$4,200 \div 100 =$	26	$3,600 \div 30 =$
5	$42,000 \div 100 =$	27	$3,600 \div 300 =$
6	$40 \div 10 =$	28	$4,800 \div 2 =$
7	$840 \div 10 =$	29	$4,800 \div 20 =$
8	$8,400 \div 10 =$	30	$4,800 \div 200 =$
9	$8,400 \div 100 =$	31	$69,000 \div 3 =$
10	$84,000 \div 100 =$	32	$69,000 \div 300 =$
11	$900 \div 10 =$	33	$69,000 \div 30 =$
12	$90 \div 3 =$	34	$800 \div 40 =$
13	$900 \div 30 =$	35	$1,200 \div 40 =$
14	$6,000 \div 100 =$	36	$1,280 \div 40 =$
15	$60 \div 2 =$	37	$1,600 \div 400 =$
16	$6,000 \div 200 =$	38	$8,000 \div 200 =$
17	$240 \div 10 =$	39	$14,000 \div 200 =$
18	$24 \div 2 =$	40	$14,600 \div 200 =$
19	$240 \div 20 =$	41	$2,560 \div 80 =$
20	$6,300 \div 100 =$	42	$16,100 \div 700 =$
21	$63 \div 3 =$	43	$14,400 \div 60 =$
22	$6,300 \div 300 =$	44	$37,800 \div 900 =$

