

Moving Between Solids and Silhouettes

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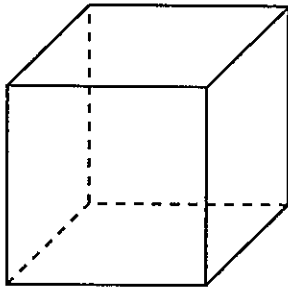
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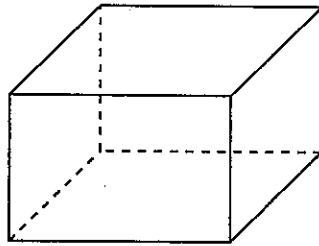
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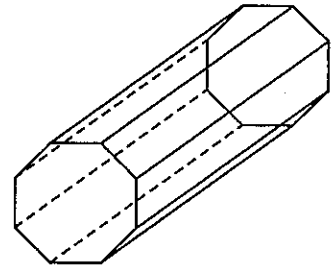
Geometric Solids



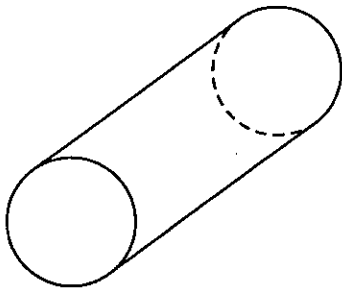
cube



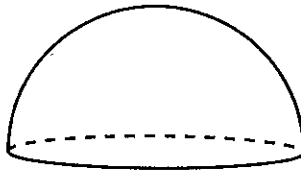
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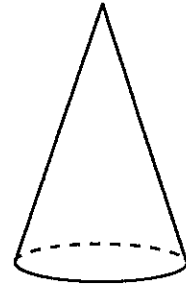
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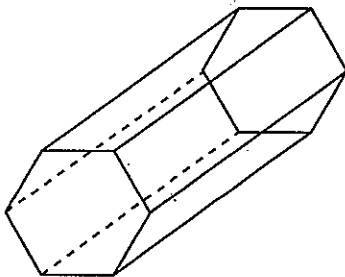
cylinder



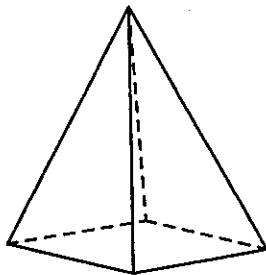
hemisphere



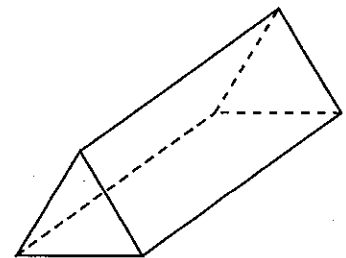
cone



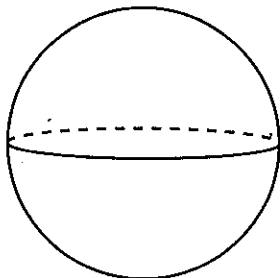
hexagonal prism



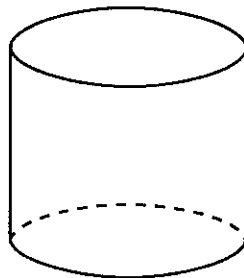
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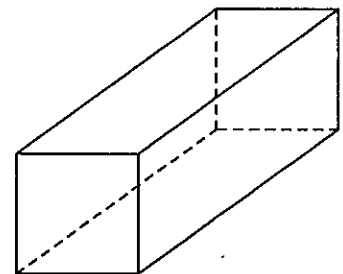
triangular prism



sphere



cylinder



square prism

Name _____

Date _____

Moving Between Solids and Silhouettes

Daily Practice



Comparing Decimals

Fill in $<$, $>$, or $=$ to make each expression true.

NOTE Students compare the sizes of different decimals.

SMH 69

1. 0.15 _____ 1.5

2. 0.05 _____ 0.5

3. 0.3 _____ 0.25

4. 0.95 _____ 0.9

5. 0.60 _____ 0.6

6. 0.85 _____ 0.05

7. 0.55 _____ 0.01

8. 0.95 _____ 1.0



Sharing 60

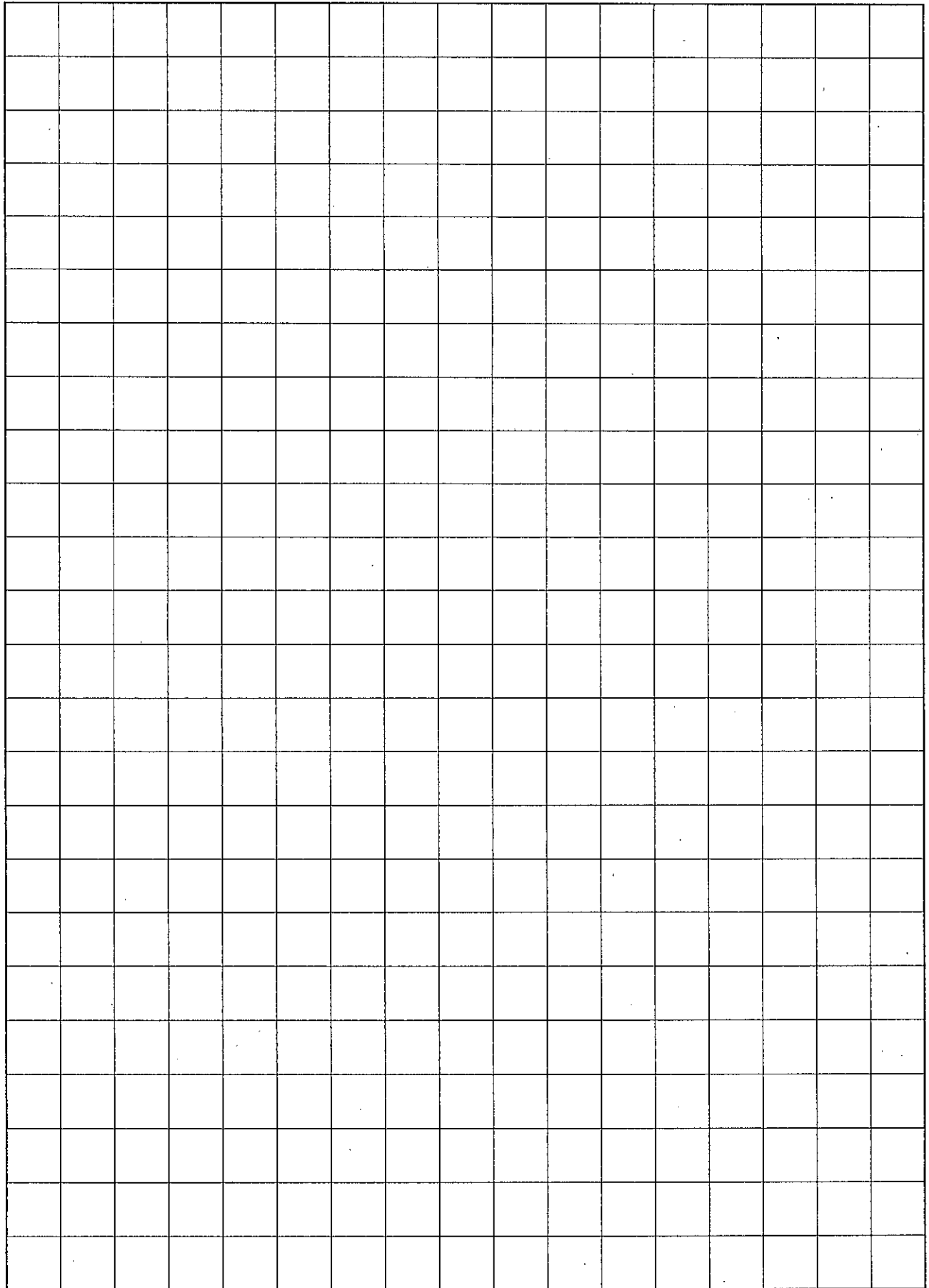
Solve these problems and explain your solutions.

NOTE Students find fractions of a group of objects.

SMH 62

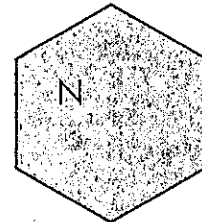
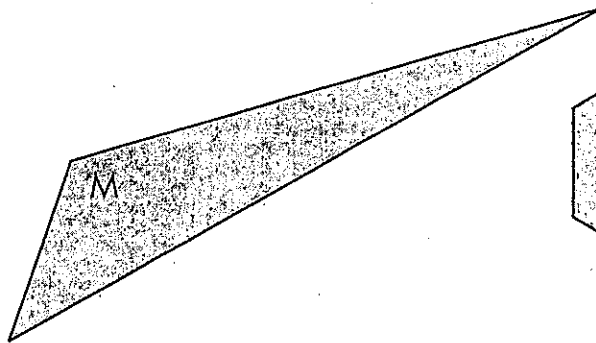
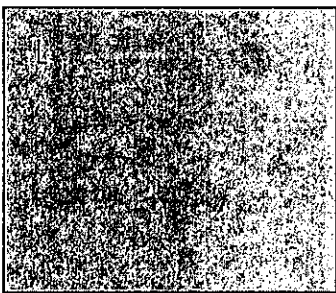
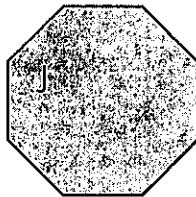
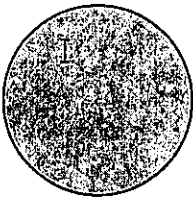
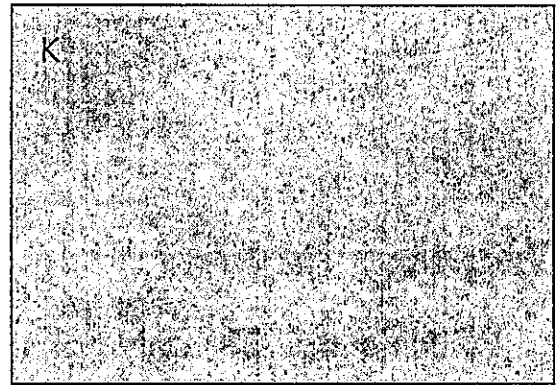
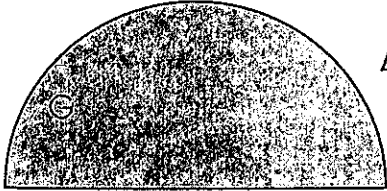
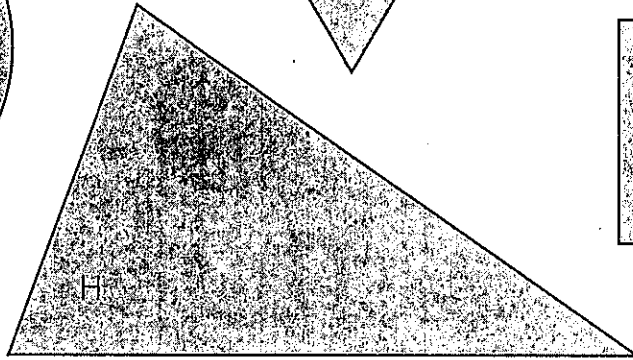
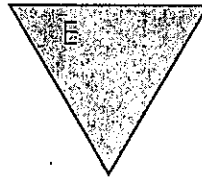
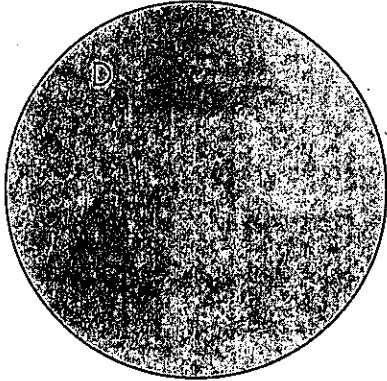
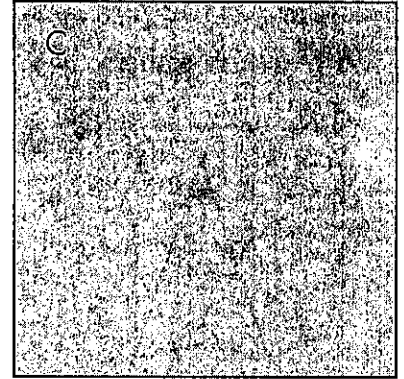
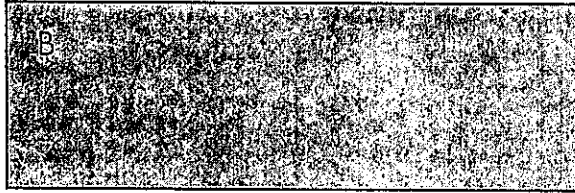
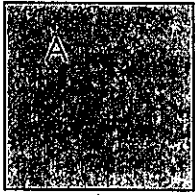
There are 60 milk cartons in a crate.

1. Mr. Daniel's class took $\frac{1}{2}$ of the milk cartons in the crate. How many milk cartons did they take?
2. Ms. Kim's class took $\frac{1}{6}$ of the milk cartons in the crate. How many milk cartons did they take?
3. Ms. Glasgow's class took $\frac{1}{5}$ of the milk cartons in the crate. How many milk cartons did they take?
4. Show each fraction on the 5×12 grid below. Label each piece.



Moving Between Solids and Silhouettes

Silhouettes of Geometric Solids





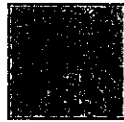
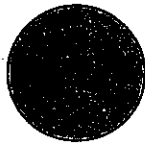
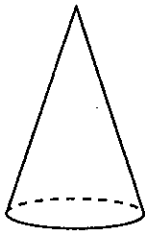
Don't Block My Shadow

Circle all the silhouettes that can be made with each solid.

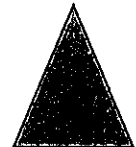
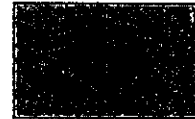
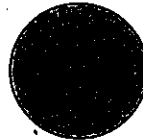
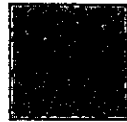
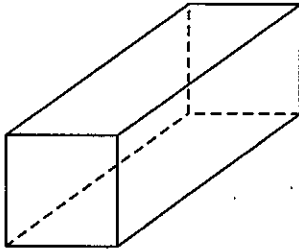
NOTE Students determine which silhouettes can be made from a given solid.

SMH 122-123

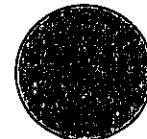
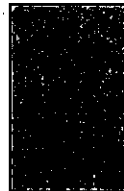
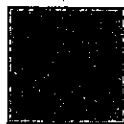
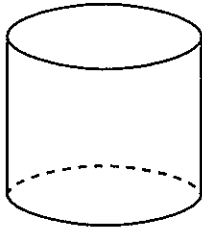
1.



2.



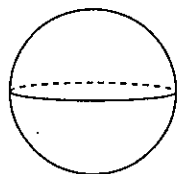
3.



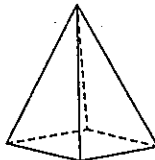
Ongoing Review

4. Which shape has only flat surfaces?

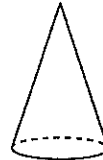
A.



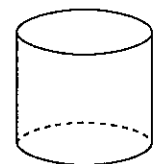
B.



C.



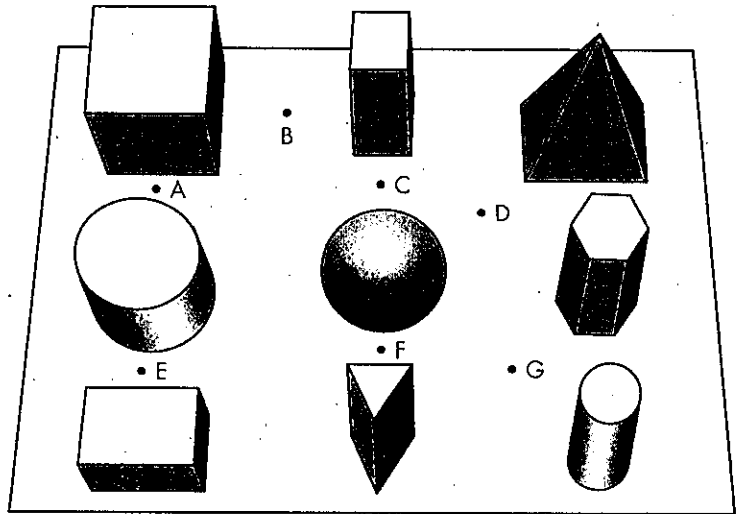
D.



Moving Between Solids and Silhouettes

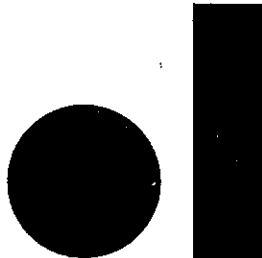
Landscape 1

Build this landscape with your geometric solids. Then look at each pair of silhouettes below. Find all of the points in the landscape from which you could see both silhouettes in a pair. Write the letters of these points beside the silhouettes.



Pair 1

Points from which these could be seen:



Pair 2

Points from which these could be seen:



Pair 3

Points from which these could be seen:



Fill-In Fractions

NOTE Students place fractions equal to or between landmarks.

SMH 60-61

Fill in the box for each fraction so that it represents the amount stated for each box. The first fraction has been done for you.

<p>1. Less than $\frac{1}{2}$</p> $\frac{\boxed{3}}{8} \quad \frac{3}{\boxed{}} \quad \frac{\boxed{}}{5}$	<p>2. $\frac{1}{2}$</p> $\frac{\boxed{}}{4} \quad \frac{5}{\boxed{}} \quad \frac{\boxed{}}{12}$
<p>3. Between $\frac{1}{2}$ and 1</p> $\frac{2}{\boxed{}} \quad \frac{\boxed{}}{6} \quad \frac{3}{\boxed{}}$	<p>4. 1</p> $\frac{\boxed{}}{3} \quad \frac{\boxed{}}{8} \quad \frac{2}{\boxed{}}$
<p>5. Between 1 and $1\frac{1}{2}$</p> $\frac{\boxed{}}{8} \quad \frac{6}{\boxed{}} \quad \frac{5}{\boxed{}}$	<p>6. More than $1\frac{1}{2}$</p> $\frac{5}{\boxed{}} \quad \frac{\boxed{}}{3} \quad \frac{4}{\boxed{}}$



Mystery Silhouettes

List objects you find at home that make silhouettes that are these shapes. The size of the silhouette does not have to match.

NOTE Students have been studying the silhouettes (shadows) of geometric shapes. Using a flashlight or other bright light will help students find silhouettes.

SMH 122-123

1.



Object(s) I found that make a square silhouette:

2.

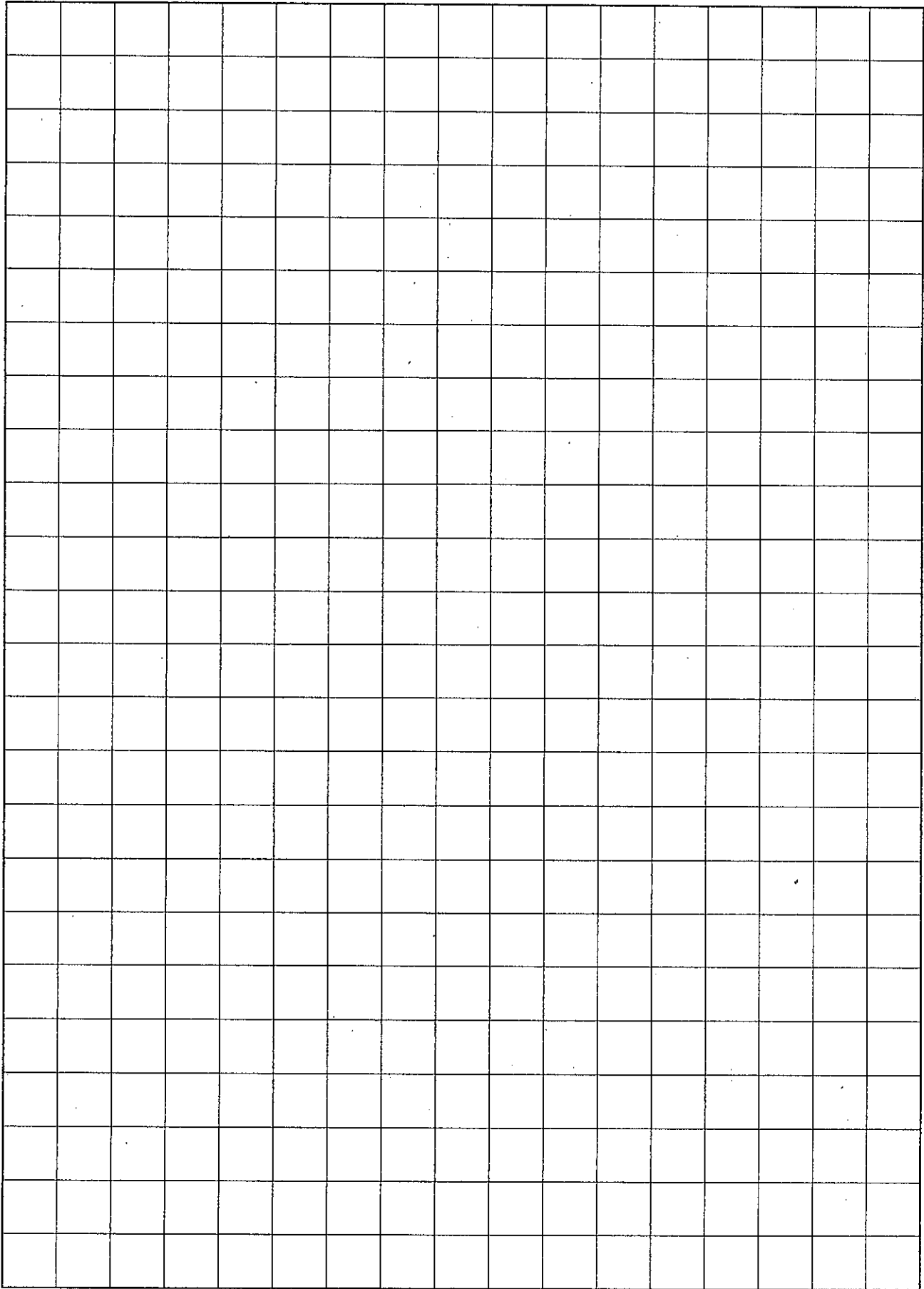


Object(s) I found that make a triangular silhouette:

3.

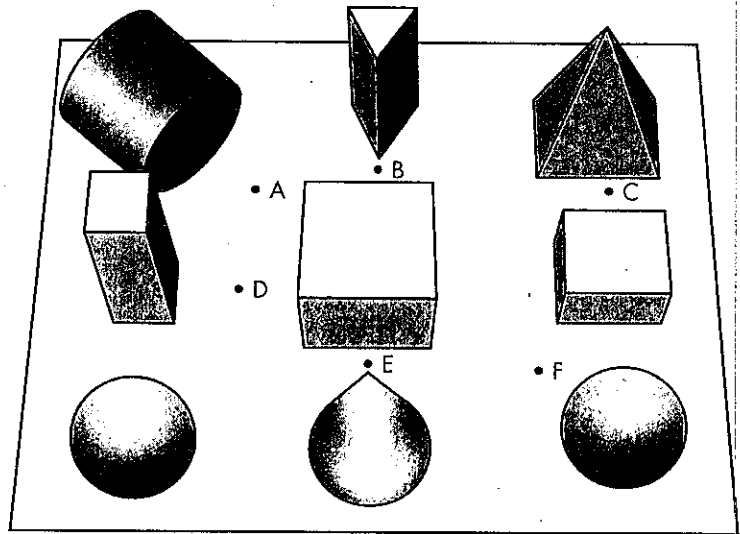


Object(s) I found that make both a rectangular silhouette and a circular silhouette:



Landscape 2

Build this landscape with your geometric solids. Then look at each pair of silhouettes below. Find all of the points in the landscape from which you could see both silhouettes in a pair. Write the letters of these points beside the silhouettes.



Pair 1

Points from which these could be seen:



Pair 2

Points from which these could be seen:



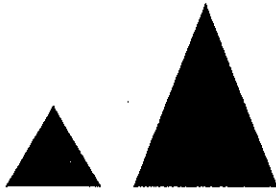
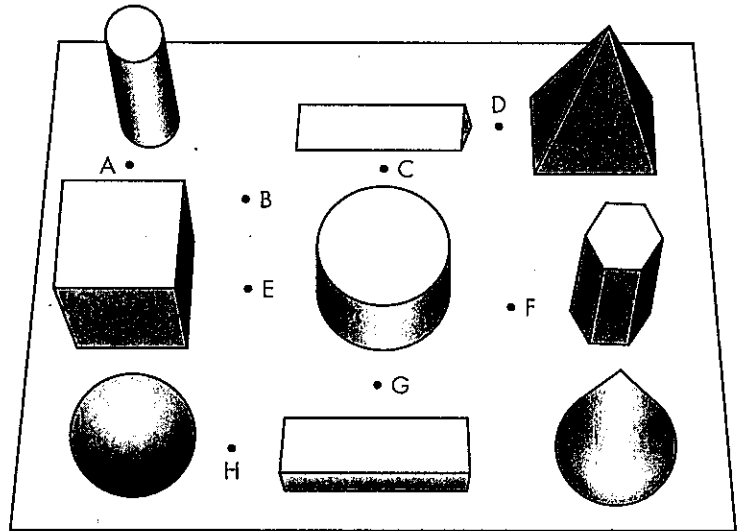
Pair 3

Points from which these could be seen:

Moving Between Solids and Silhouettes

Landscape 3

Build this landscape with your geometric solids. Then look at each pair of silhouettes below. Find all of the points in the landscape from which you could see both silhouettes in a pair. Write the letters of these points beside the silhouettes.



Pair 1

Points from which these could be seen:



Pair 2

Points from which these could be seen:



Pair 3

Points from which these could be seen:

Landscape Challenge

Look at this pair of silhouettes. Find all of the points in the three geometric landscapes from which these two silhouettes could be seen. Write the letters of these points from *Student Activity Book* pages 7, 11, and 12.



These could be seen from the following points:

In Landscape 1:

In Landscape 2:

In Landscape 3:



How Many Waffles?

Solve each problem. Use pictures and words to show how you solved each problem.

NOTE Students find the total amount given the number of fractional parts.

SMH 58, 62

1. Three people each get $1\frac{3}{4}$ waffles. How many waffles are there in all? Draw a picture and tell how many.

_____ waffles in all

2. Draw a picture to show how four people could each have $2\frac{1}{3}$ waffles. Tell how many waffles in all.

_____ waffles in all



Fractions: Which Is Bigger?

Circle the larger fraction. Explain how you knew which fraction is larger.

NOTE Students compare the value of different fractions.

SMH 60-61

1.

$\frac{3}{4}$

$\frac{3}{2}$

2.

$1\frac{1}{5}$

$\frac{3}{2}$

3.

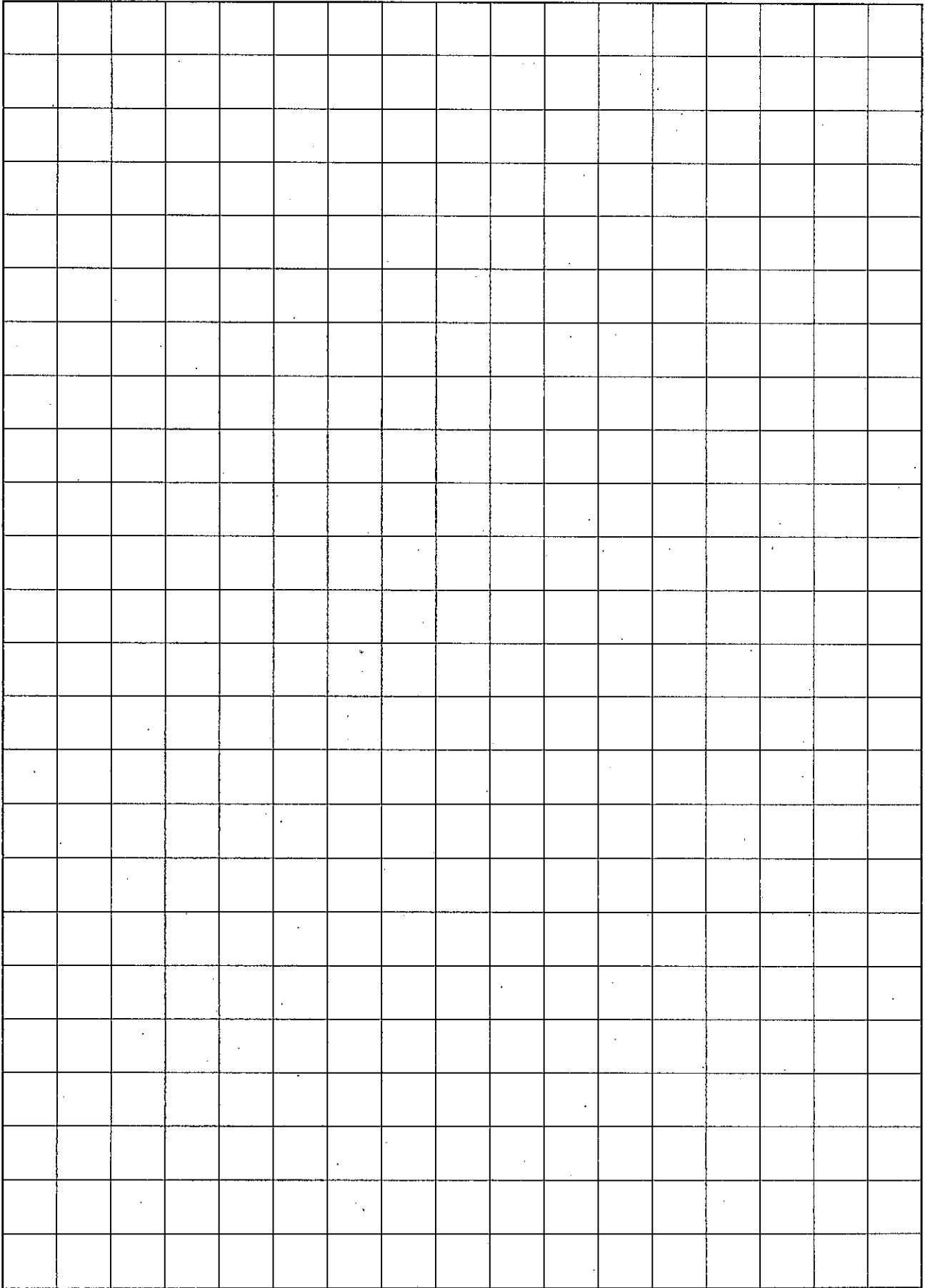
$\frac{2}{4}$

$\frac{4}{8}$

4.

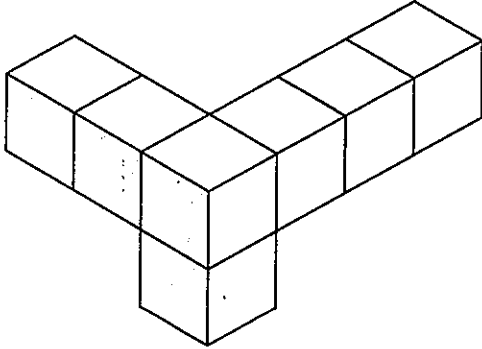
$\frac{5}{6}$

$\frac{6}{5}$

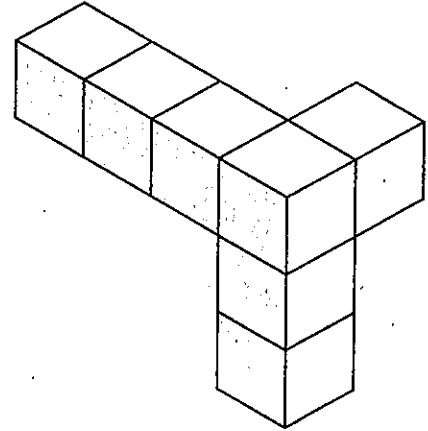


Make the Buildings (page 1 of 2)

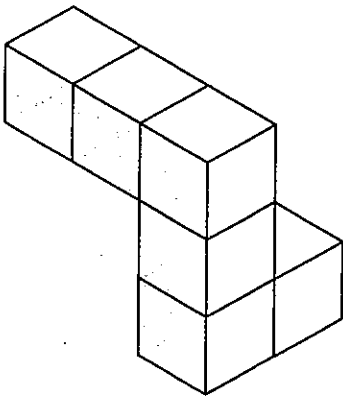
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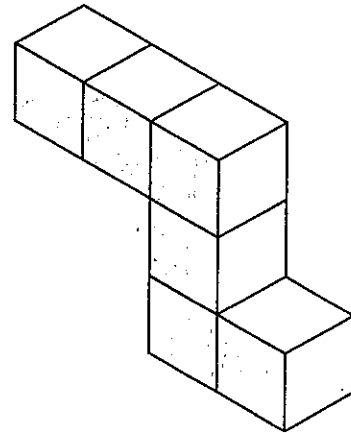
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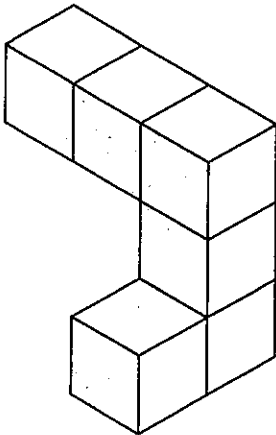
3.



4.

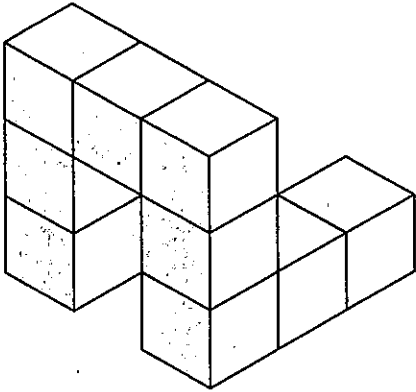


5.

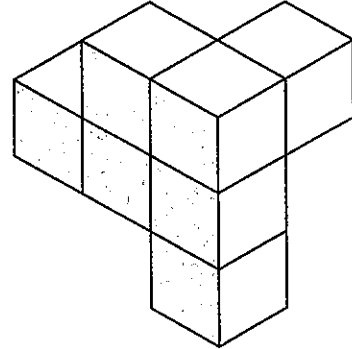


Make the Buildings (page 2 of 2)

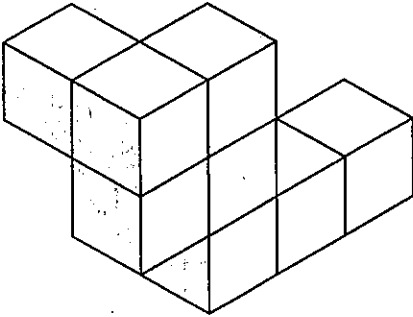
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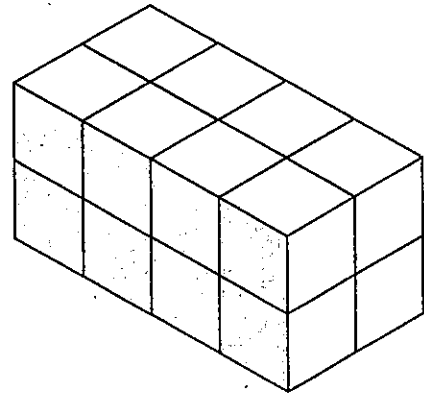
7.



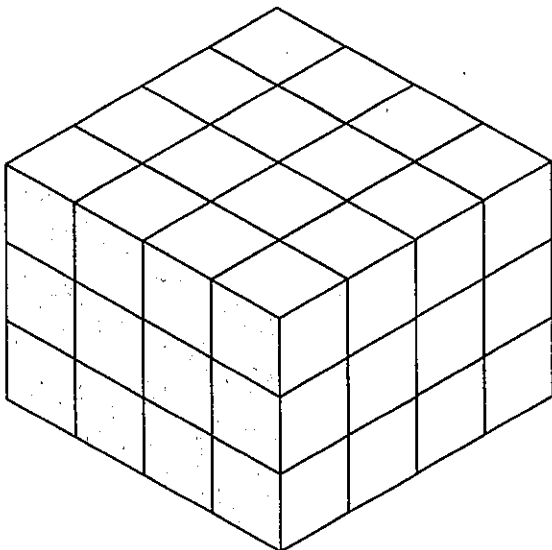
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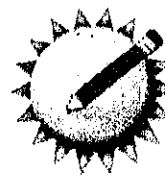


9.



10.





NOTE Students find fractions of a group of objects.

SMH 55

Books to Read

Solve these problems and explain your solutions.

There are 48 books on the reading list.

1. Luke read $\frac{1}{3}$ of the books on the reading list.
How many books did he read?
2. Yuson read $\frac{3}{8}$ of the books on the reading list.
How many books did she read?
3. Alejandro read $\frac{4}{6}$ of the books on the reading list.
How many books did he read?
4. **a.** Who read the most books on the reading list?

b. What fraction of the reading list does he or she have left to read?

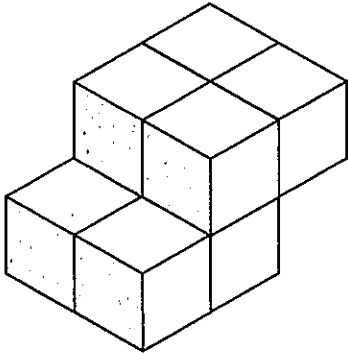


How Many Cubes?

How many cubes does it take to make each building?

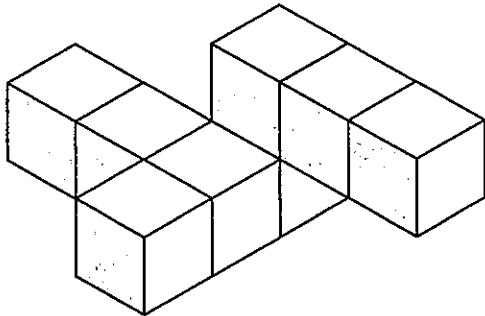
NOTE Student have been making cube buildings and finding the volume of these buildings.

1.



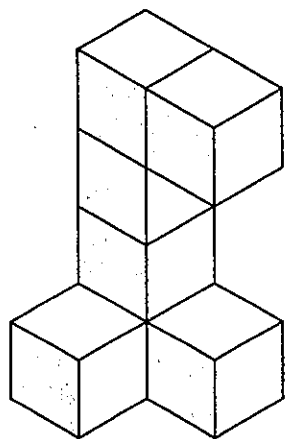
_____ cubes

2.



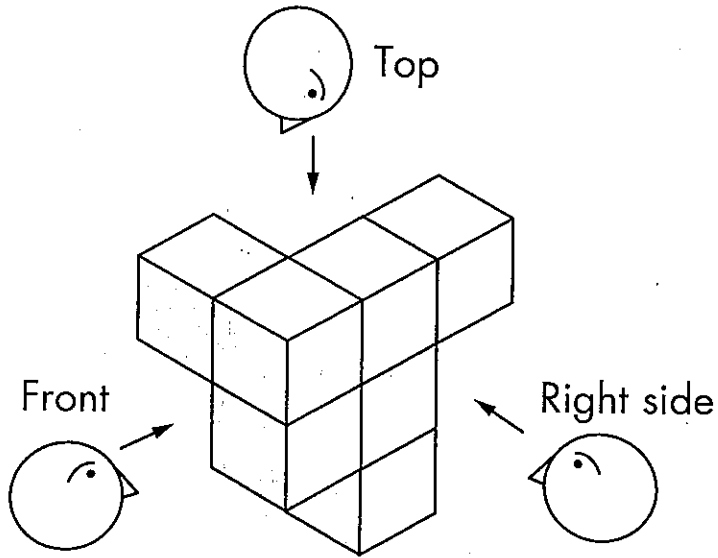
_____ cubes

3.



_____ cubes

Drawing Silhouettes: An Introduction



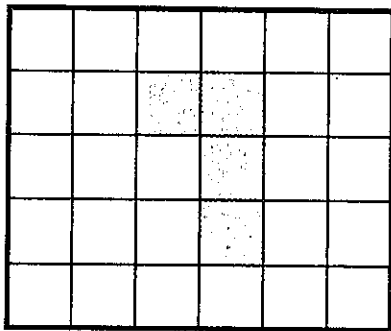
Use cubes to make this building.

Two silhouettes of the building are shown below.

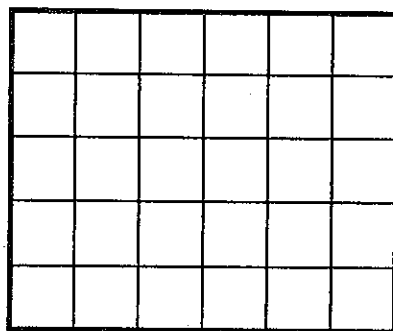
One was seen from the front, and one was seen from the right side.

The silhouettes are drawn on graph paper so that we can see where the cubes are.

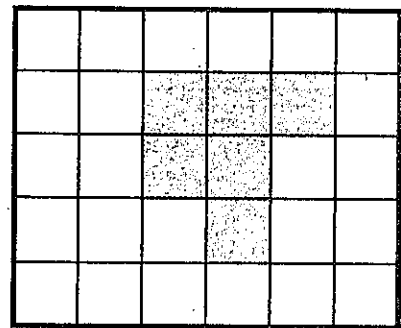
What do you think the top silhouette looks like?



Front



Top

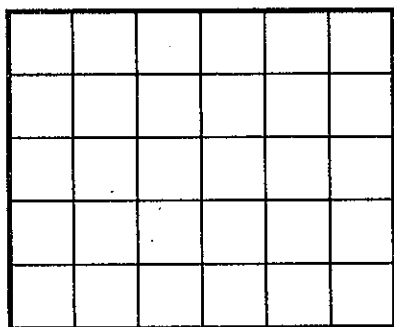
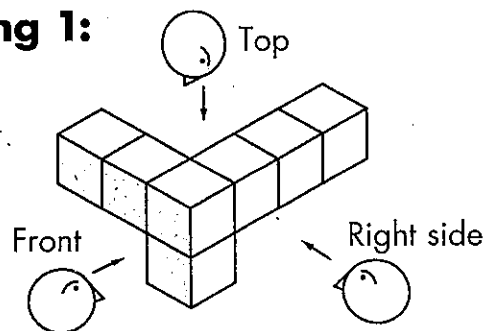


Right side

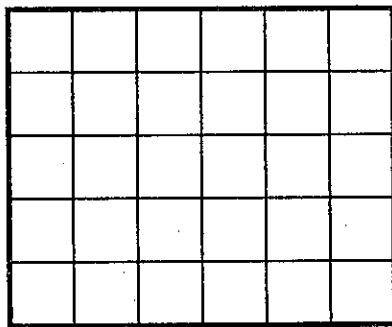
Front, Top, and Side Silhouettes (page 1 of 2)

Make each building with cubes.
Then draw the silhouettes for both.

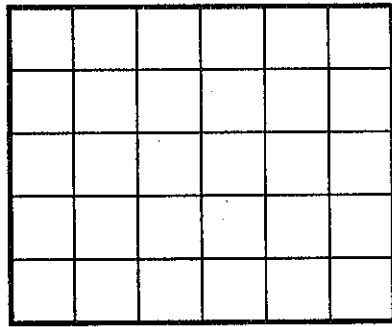
Building 1:



Front

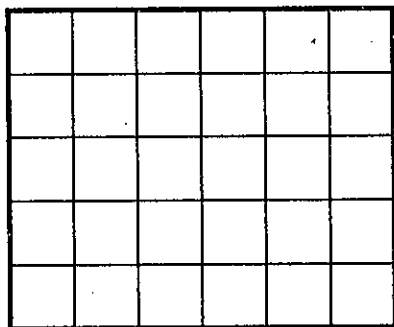
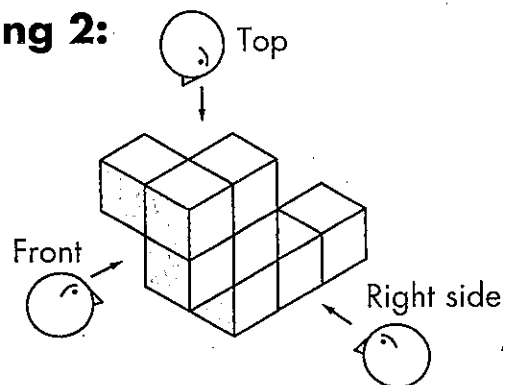


Top, as seen from the front

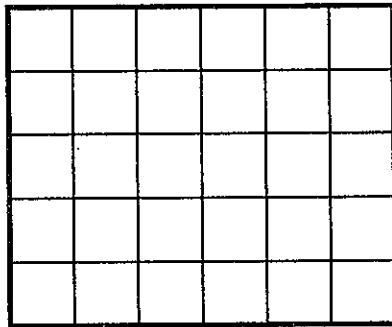


Right side

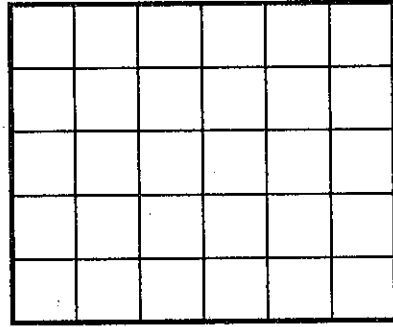
Building 2:



Front



Top, as seen from the front



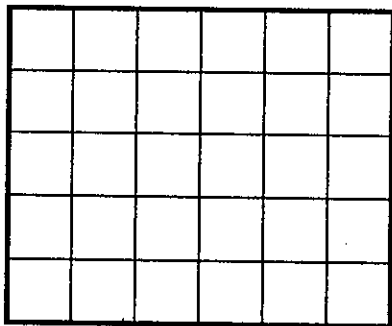
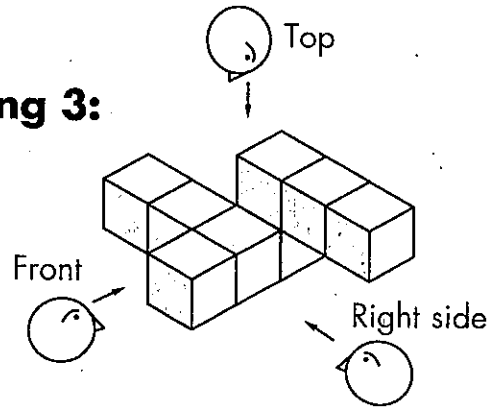
Right side

Front, Top, and Side Silhouettes

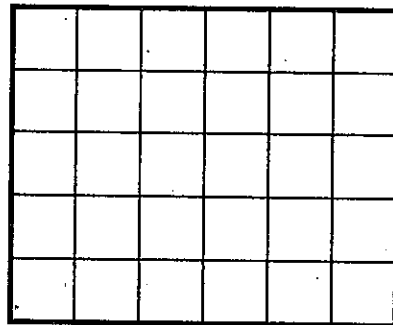
(page 2 of 2)

Make each building with cubes.
Then draw the silhouettes for both.

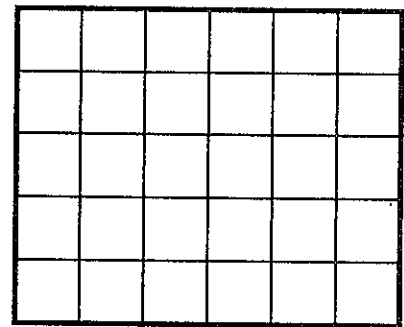
Building 3:



Front

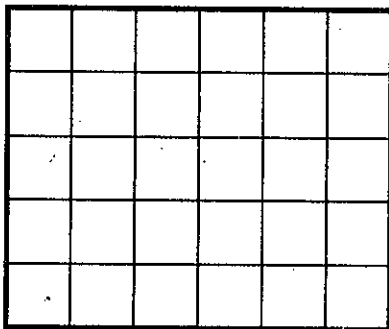
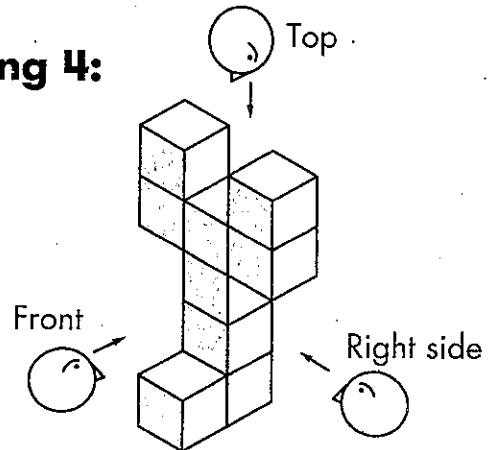


Top, as seen from the front

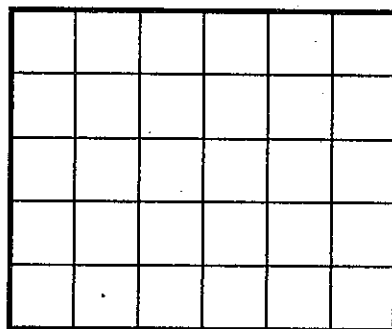


Right side

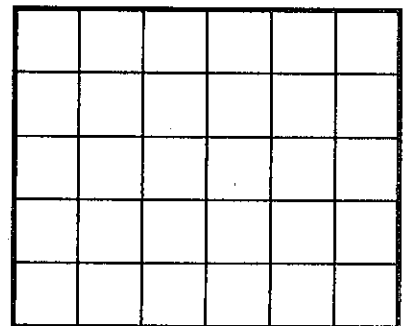
Building 4:



Front



Top, as seen from the front



Right side



Is That True?

Determine whether each equation is true or false.
Write T or F after each equation.

NOTE Students practice adding fractions.

SMH 62

1. $\frac{2}{5} + \frac{1}{10} = \frac{1}{2}$ _____

2. $\frac{5}{6} = \frac{2}{3}$ _____

3. $\frac{1}{4} + \frac{1}{4} = \frac{1}{8}$ _____

4. $\frac{1}{8} + \frac{1}{8} = \frac{1}{4}$ _____

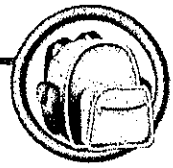
5. $\frac{1}{2} + \frac{1}{3} = \frac{4}{6}$ _____

Fill in the blank(s) to make these equations true.

6. _____ + _____ = 1

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

8. $\frac{3}{5} +$ _____ = $1\frac{1}{5}$



Decimals: Which Is Bigger?



NOTE Students compare the size of different decimals.

SMH 69

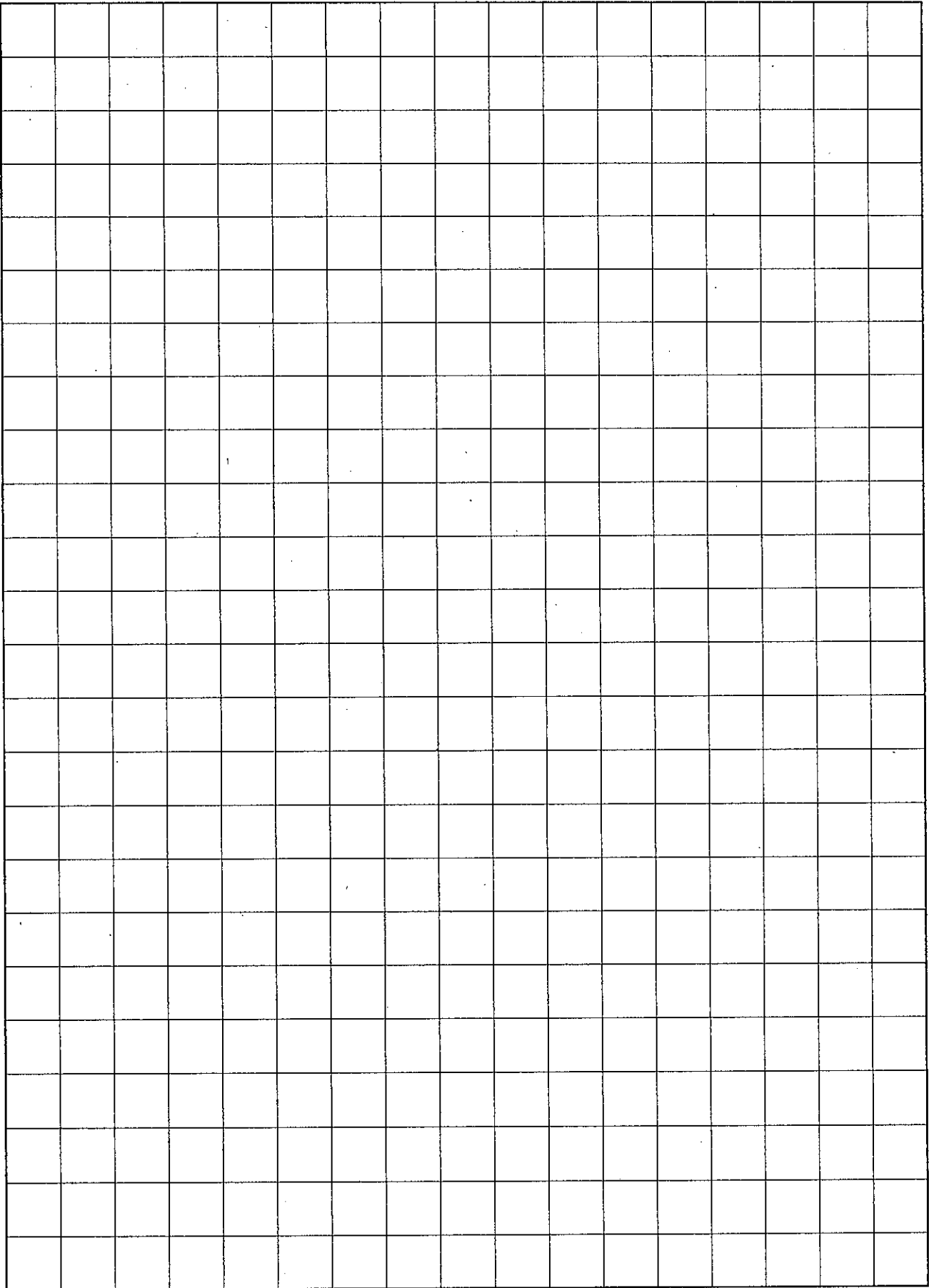
Circle the larger decimal. Explain how you figured out each one.

1. 0.05 0.5

2. 0.33 0.2

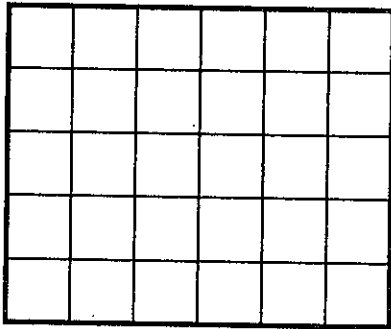
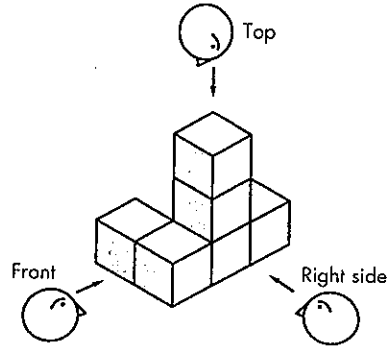
3. 0.75 0.7

4. 1.2 2.1

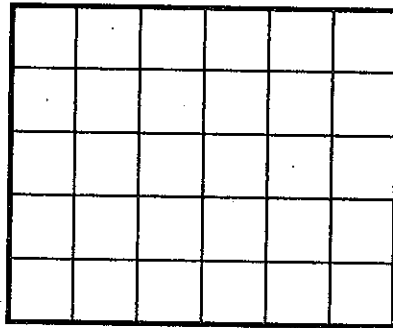


Drawing Silhouettes A and B

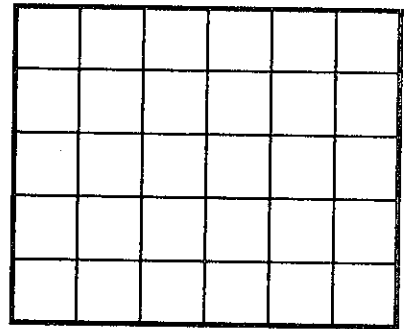
A. Draw the three silhouettes for this building. Do not use cubes.



Front

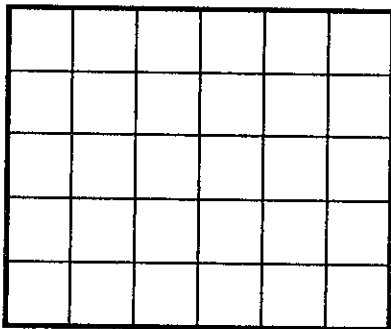
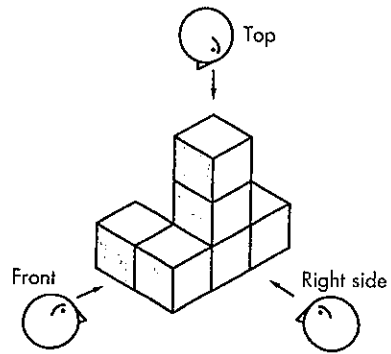


Top, as seen from the front

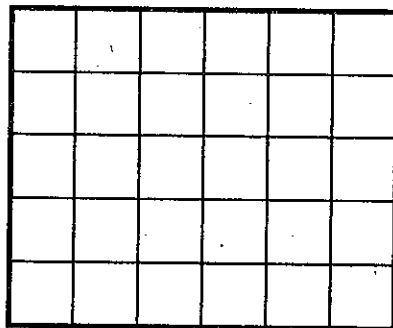


Right side

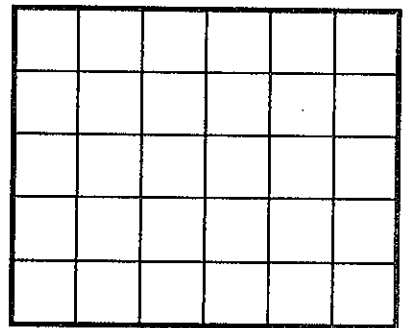
B. Make the building with cubes. Then draw the three silhouettes.



Front



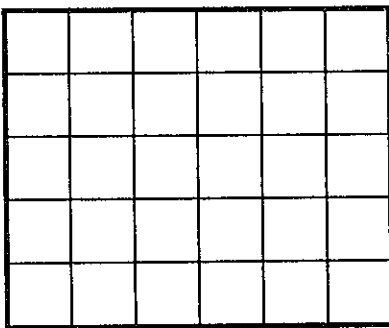
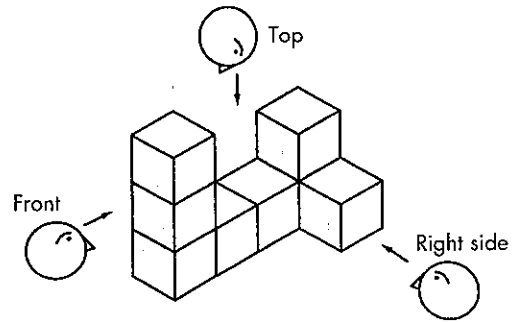
Top, as seen from the front



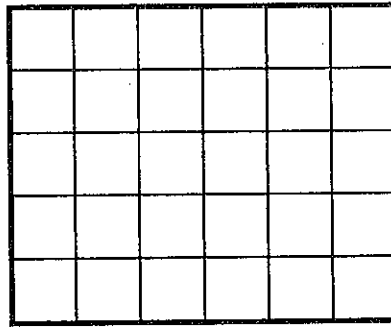
Right side

Drawing Silhouettes C and D

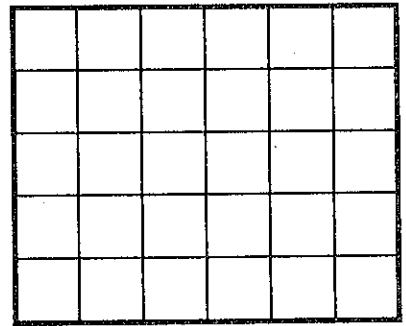
C. Draw the three silhouettes for this building. Do not use cubes.



Front

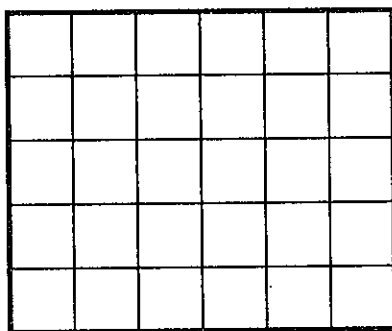
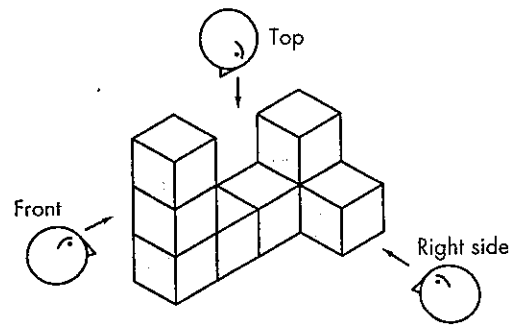


Top, as seen from the front

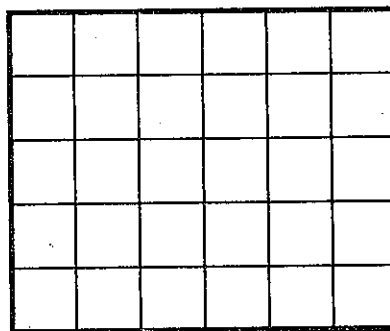


Right side

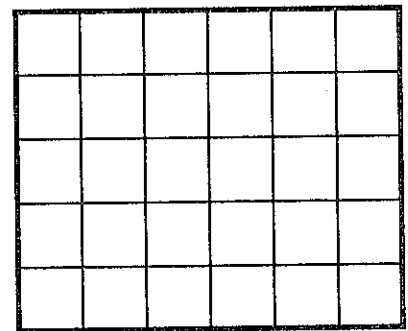
D. Make the building with cubes. Then draw the three silhouettes.



Front



Top, as seen from the front



Right side

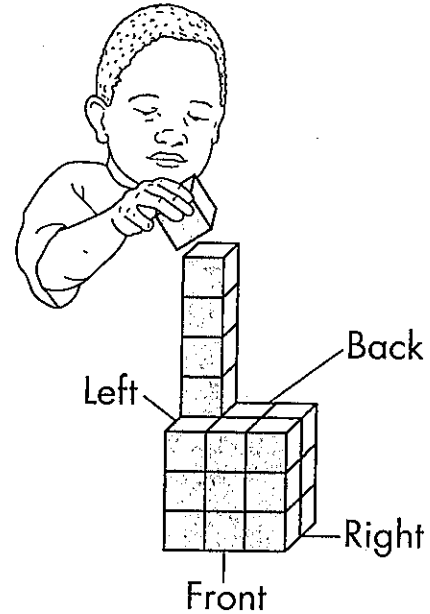
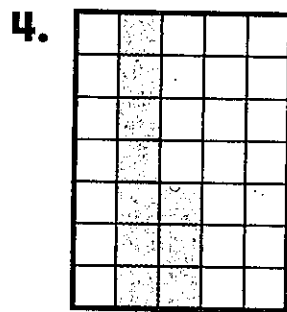
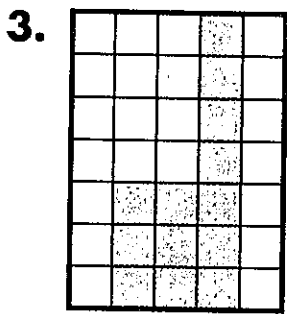
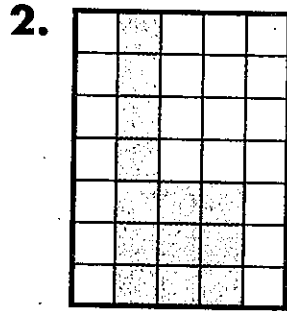
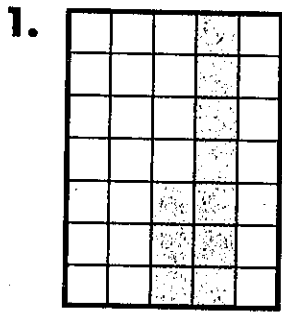


Castle Builder

A student built a "castle" from blocks. Label the silhouettes below *front*, *back*, *left*, and *right*.

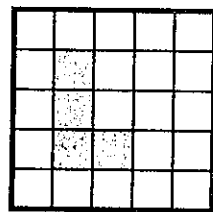
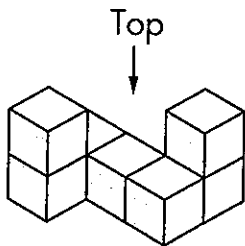
NOTE Students explore how objects look from various perspectives.

SMH 124

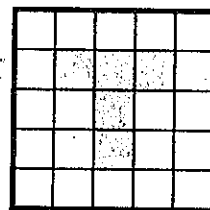


Ongoing Review

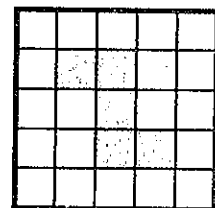
5. Choose the silhouette that is the correct one for the top of this cube building.



TOP



TOP



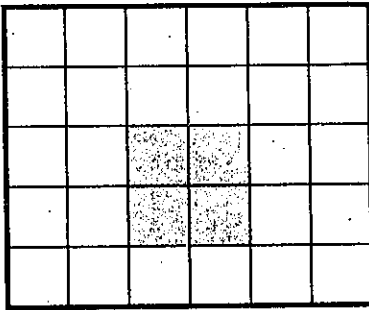
TOP

Moving Between Solids and Silhouettes

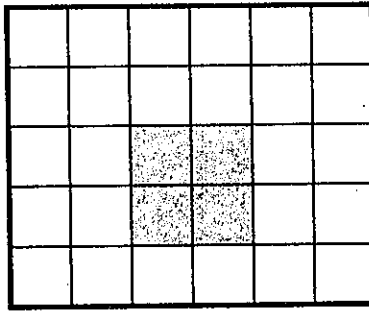
Building from Silhouettes

For each puzzle below, construct a cube building that makes the three silhouettes. Do any other buildings also make these silhouettes?

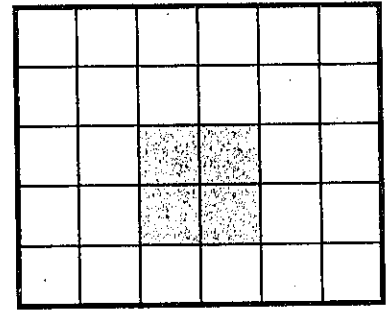
1.



Front

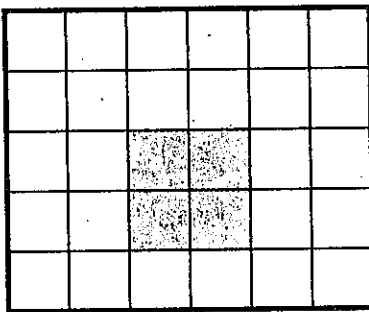


Top, as seen from the front

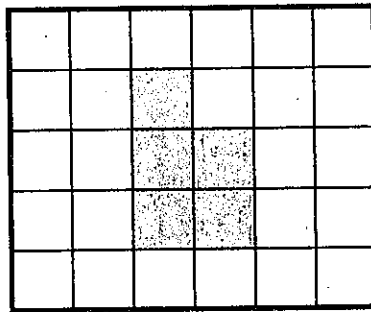


Right side

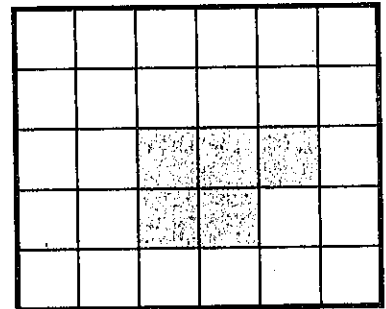
2.



Front

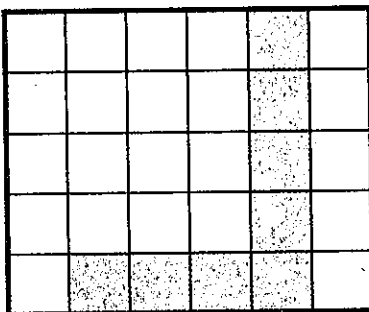


Top, as seen from the front

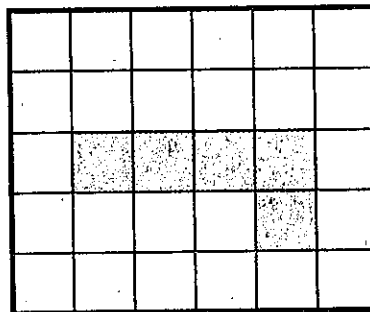


Right side

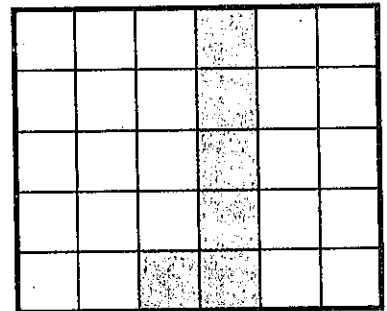
3.



Front



Top, as seen from the front



Right side

Challenge: How many different cube buildings make three silhouettes in Puzzle 1? In Puzzle 2? In Puzzle 3?



Decimal Problems

Solve each problem by using Steve's running log below. Use another sheet of paper to solve the problems.

NOTE Students compare and add decimals using a running log.

SMH 70-71

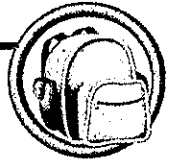
Day	Mileage	Comments
Monday	2.2 miles	I ran around the pond once.
Tuesday	1.50 miles	I ran on the track six times around.
Wednesday	1.25 miles	I ran on the track again.
Thursday	0 miles	I was tired and took a day off.
Friday	2.9 miles	I was visiting my aunt and ran with her.
Saturday	0.8 mile	I was worn out from yesterday.
Sunday	1 mile	I ran pretty slowly.

1. **a.** On what 4 days did Steve run the farthest?
 - b.** How many miles did he run during those 4 days?

2. **a.** On what 3 days did Steve run the shortest distance?
 - b.** How many miles did he run during those 3 days?

Name _____

Date _____



Showing Decimals on a Grid

Show the following decimals on the grids below.
Label each grid.

NOTE Students represent decimals on 10×10 grids.

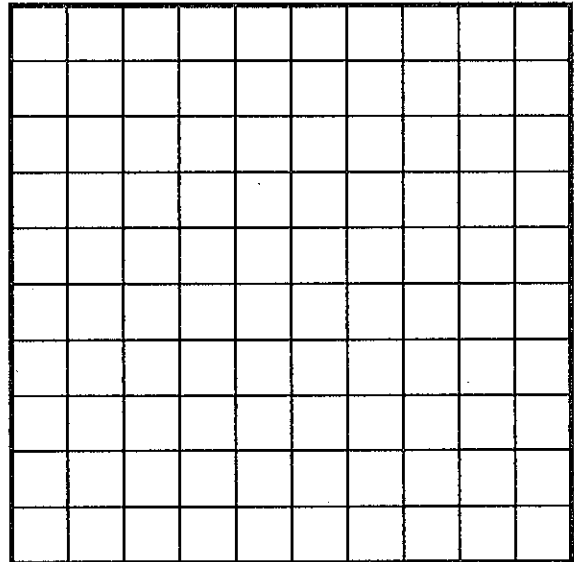
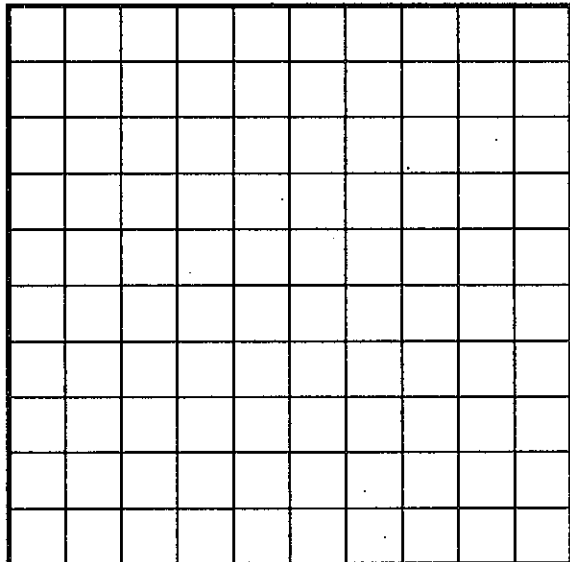
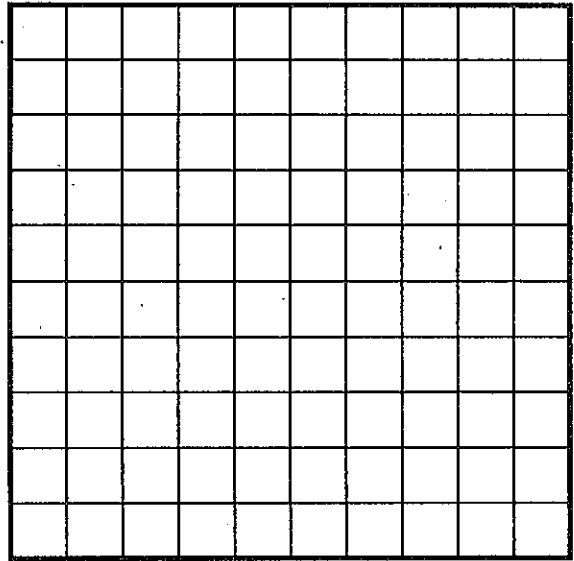
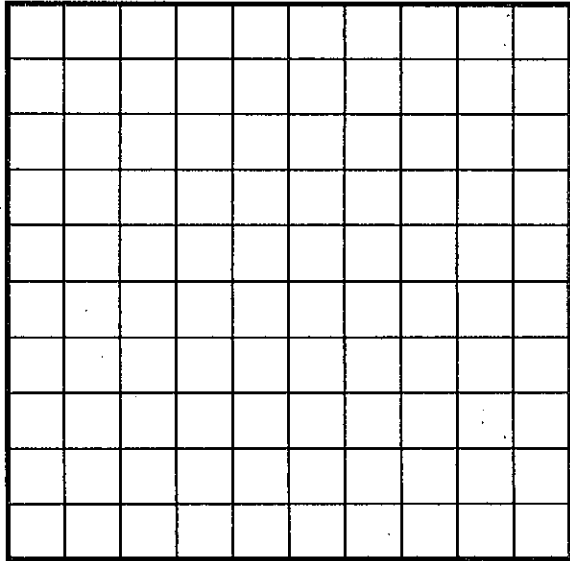
SMH 65, 66, 67, 68

0.1

0.95

0.08

0.76



Moving Between Solids and Silhouettes

Different Views of a City

This map shows the top view of a cube city.

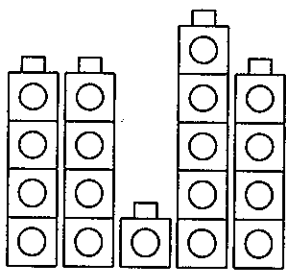
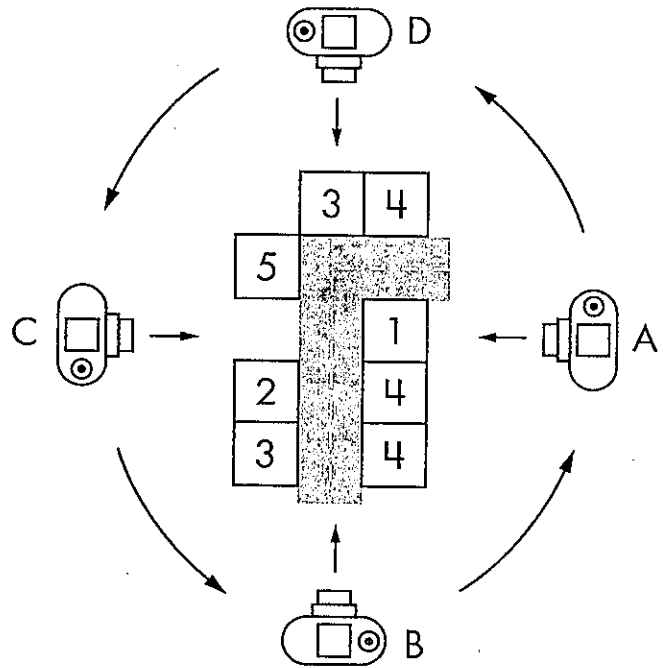
The eight buildings shown are made from connecting cubes.

The number on each building tells how many cubes high that building is.

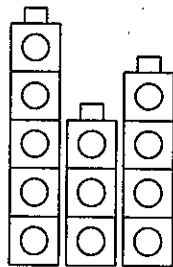
A photographer flew around the city in a helicopter and took four silhouette photographs.

The photographs were taken from points A, B, C, and D (looking in the directions of the arrows).

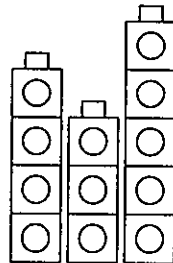
The resulting silhouettes are shown here. Below each one, write the letter of the point where it was taken.



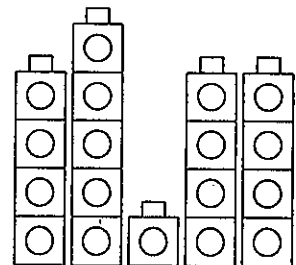
1. _____



2. _____



3. _____



4. _____

Name _____

Date _____



Equivalent Fractions

NOTE Students identify equivalent fractions.

SMH 59

Write each fraction below in the appropriate box.
All fractions in the box must be equal.

$\frac{2}{12}$

$\frac{2}{8}$

$\frac{2}{4}$

$\frac{4}{12}$

$\frac{3}{6}$

$\frac{3}{12}$

$\frac{5}{10}$

$\frac{9}{12}$

$\frac{4}{6}$

$\frac{2}{6}$

$\frac{8}{12}$

$\frac{6}{8}$

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

How Many Cubes?

How many cubes fit in each box? First, determine the answer without building the box. Then build a box and use cubes to check. Compare your first answer to the actual answer before going on to the next box.

Think about a way you could determine the number of cubes that would fit in any box.

	Pattern	Picture	First Answer	Actual Answer
Box 1			_____	_____
Box 2			_____	_____
Box 3			_____	_____



Fraction Story Problems

Solve each problem and show your solution.

NOTE Students solve fraction problems in a story context.

SMH 53–55, 62

- 1.** There was a quart of milk in the refrigerator. Venetta drank $\frac{1}{4}$ of the quart. Steve drank $\frac{1}{8}$ of the quart. Kimberly drank $\frac{2}{8}$ of the quart.
 - a.** How much milk did Venetta, Steve, and Kimberly drink in all?

 - b.** How much milk is left?

- 2.** There were 30 crackers on a plate. Lucy ate $\frac{1}{6}$ of the crackers, Abdul ate $\frac{1}{5}$ of the crackers, and Emaan ate $\frac{1}{3}$ of the crackers.
 - a.** Who ate the most crackers? How many crackers did he or she eat?

 - b.** How many crackers are left?



Moving Between Solids and Silhouettes

Comparing Decimals

Fill in $<$, $>$, or $=$ to make each expression true.

1. 0.25 _____ 0.3

2. 0.71 _____ 0.09

3. 0.33 _____ 0.30

4. 0.02 _____ 0.17

5. 0.46 _____ 0.54

Write decimals in the blanks to make each equation true.

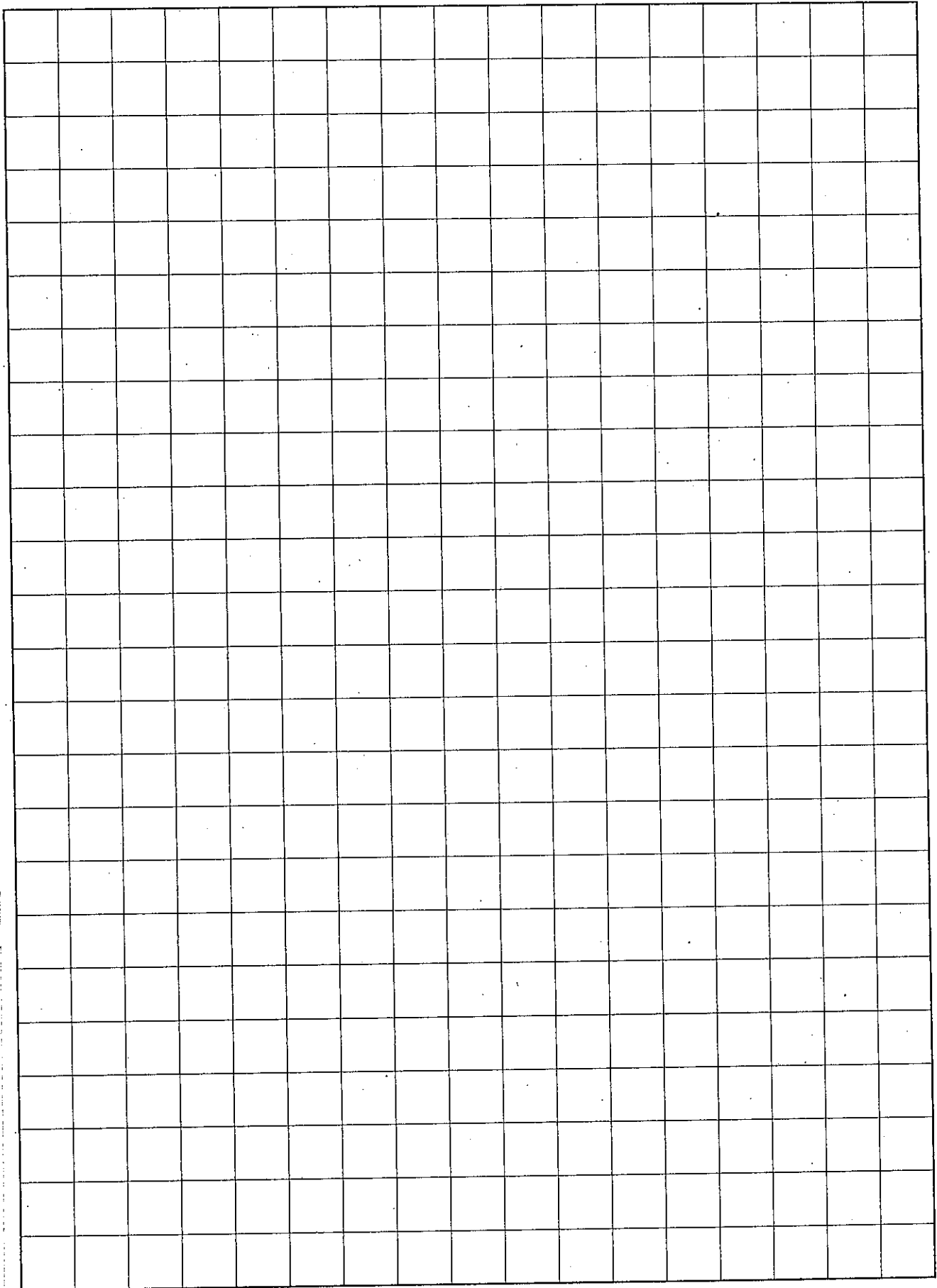
6. _____ + _____ > 1

7. _____ + _____ < 1

8. _____ + _____ $= 1$

NOTE Students compare the value of decimals and create equations that are greater than, equal to, or less than 1.

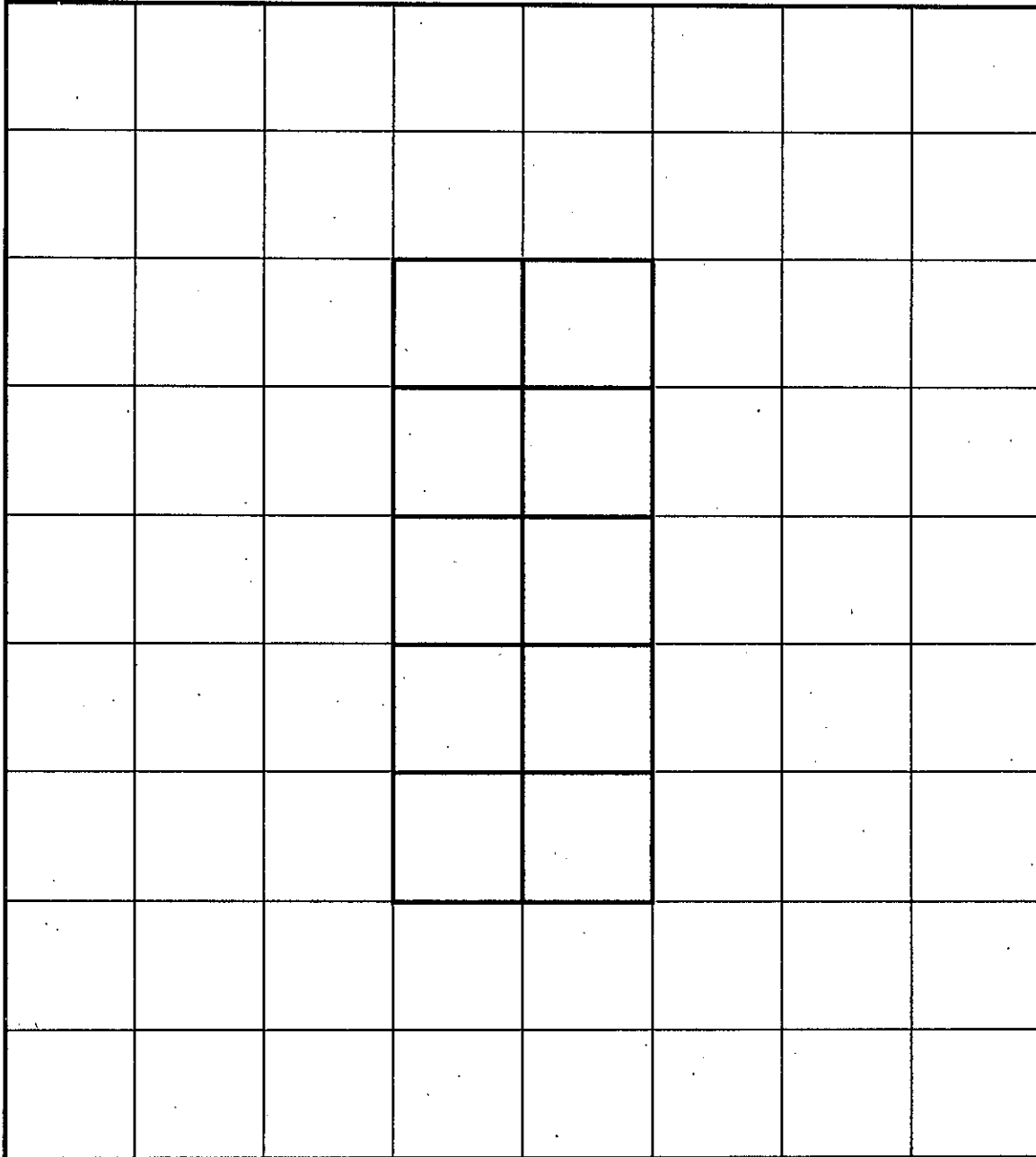
SMH 69



Making Boxes from the Bottom Up

(page 1 of 4)

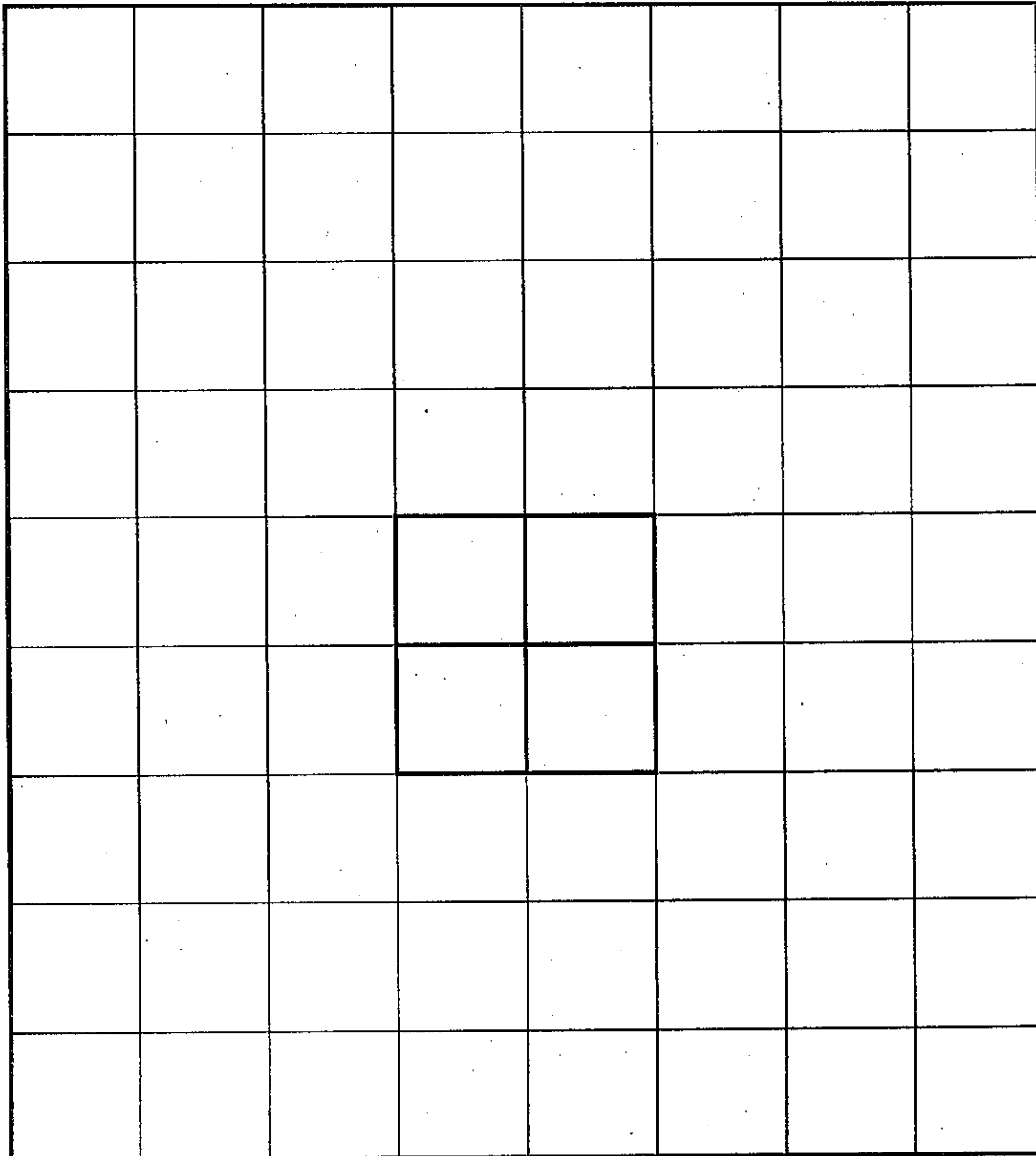
The dark squares make the bottom of a rectangular box that contains exactly 20 cubes. The box has no top. Draw the sides to finish the pattern for the box.



Making Boxes from the Bottom Up

(page 2 of 4)

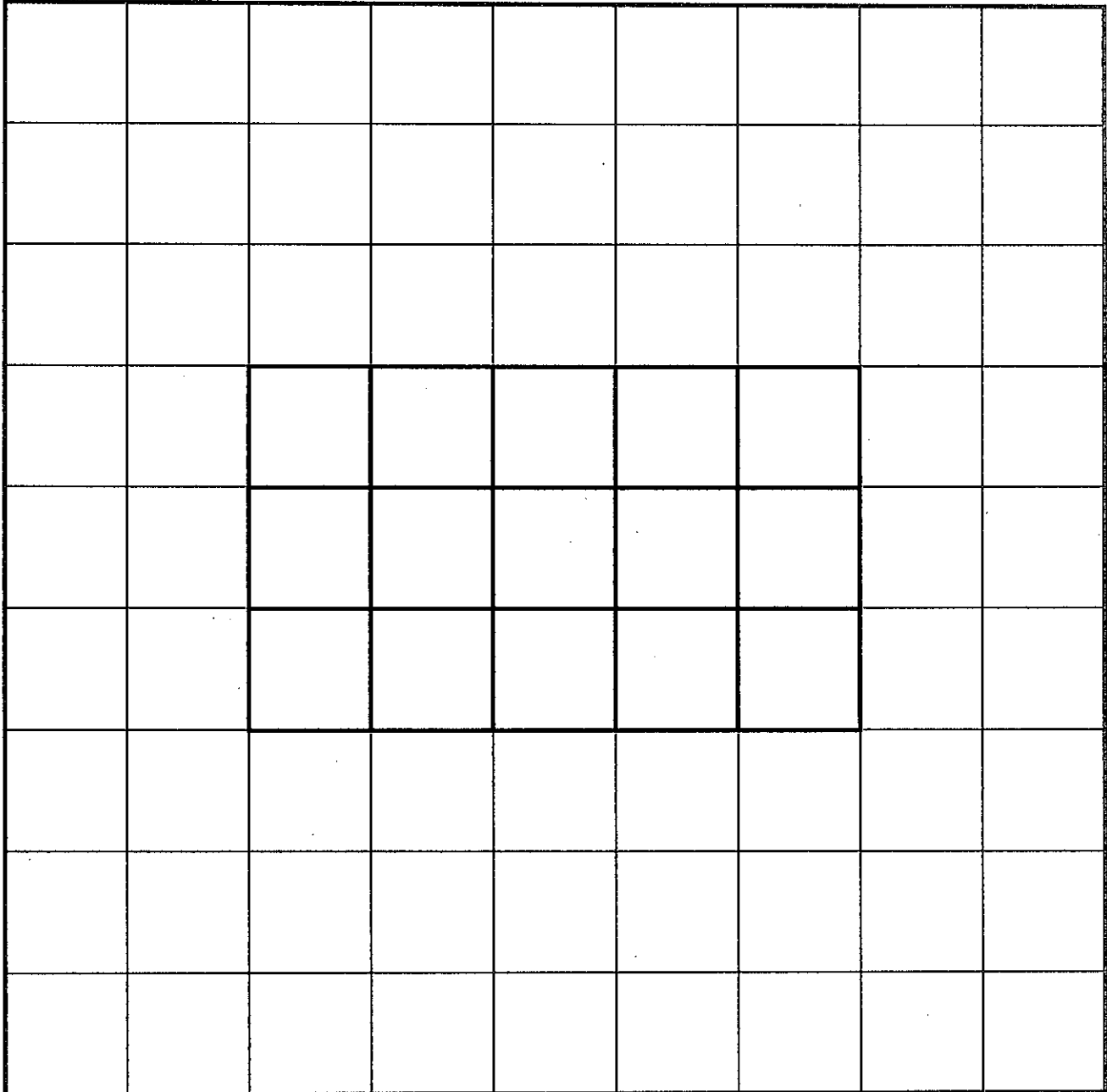
The dark squares make the bottom of a rectangular box that contains exactly 12 cubes. The box has no top. Draw the sides to finish the pattern for the box.



Making Boxes from the Bottom Up

(page 3 of 4)

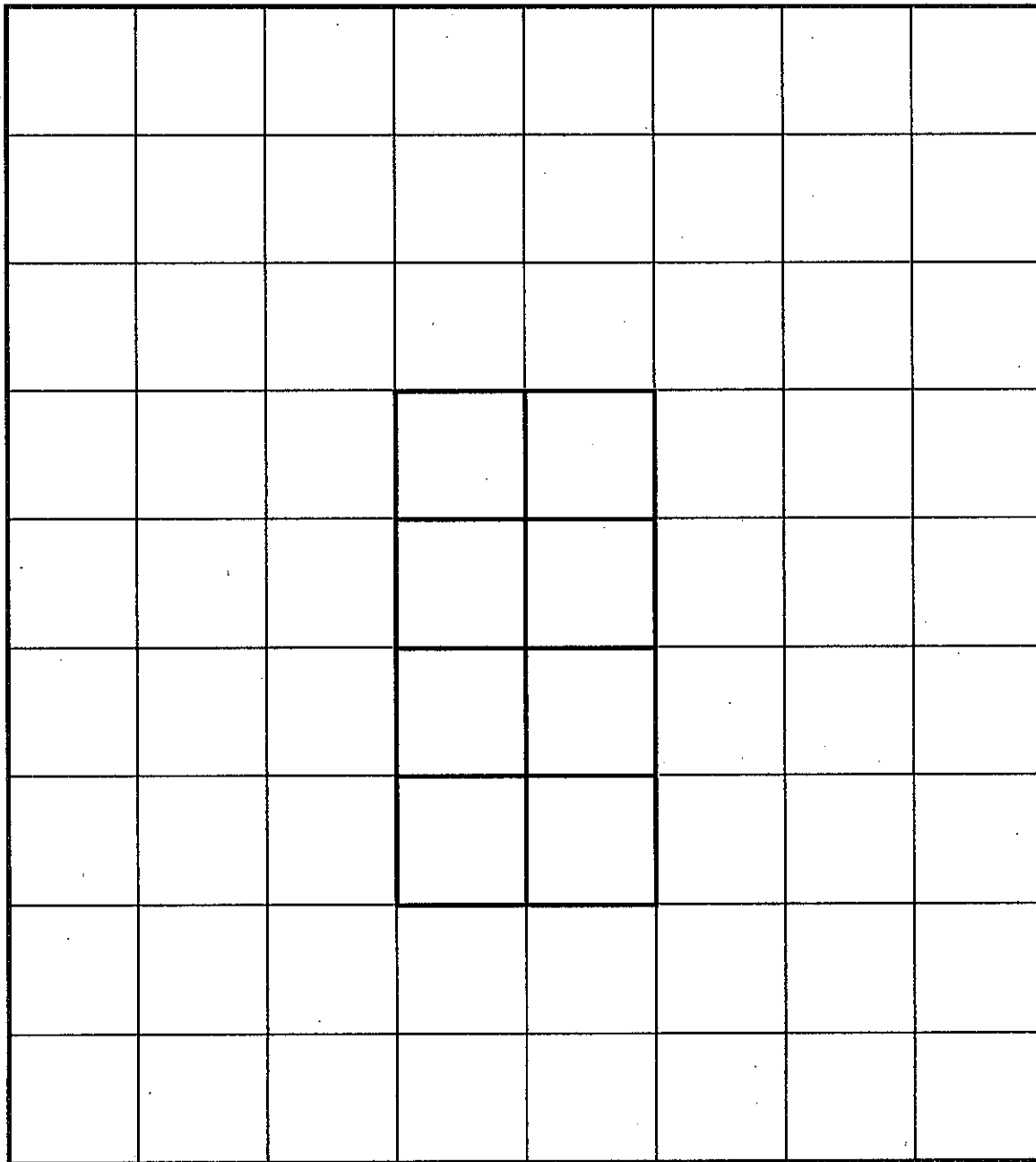
The dark squares make the bottom of a rectangular box that contains exactly 30 cubes. The box has no top. Draw the sides to finish the pattern for the box.



Making Boxes from the Bottom Up

(page 4 of 4)

The dark squares make the bottom of a rectangular box that contains exactly 24 cubes. The box has no top. Draw the sides to finish the pattern for the box.





Comparing Fractions

Fill in $<$, $>$, or $=$ to make each expression true.

NOTE Students compare the value of different fractions.

SMH 60-61

1. $\frac{3}{4}$ _____ $\frac{4}{5}$

2. $\frac{7}{12}$ _____ $\frac{1}{2}$

3. $1\frac{2}{3}$ _____ $2\frac{1}{3}$

4. $\frac{5}{1}$ _____ $\frac{1}{5}$

5. $\frac{2}{12}$ _____ $\frac{1}{6}$

6. $\frac{2}{5}$ _____ $\frac{4}{6}$

7. $\frac{9}{12}$ _____ $\frac{7}{4}$

8. $\frac{0}{3}$ _____ $\frac{0}{8}$

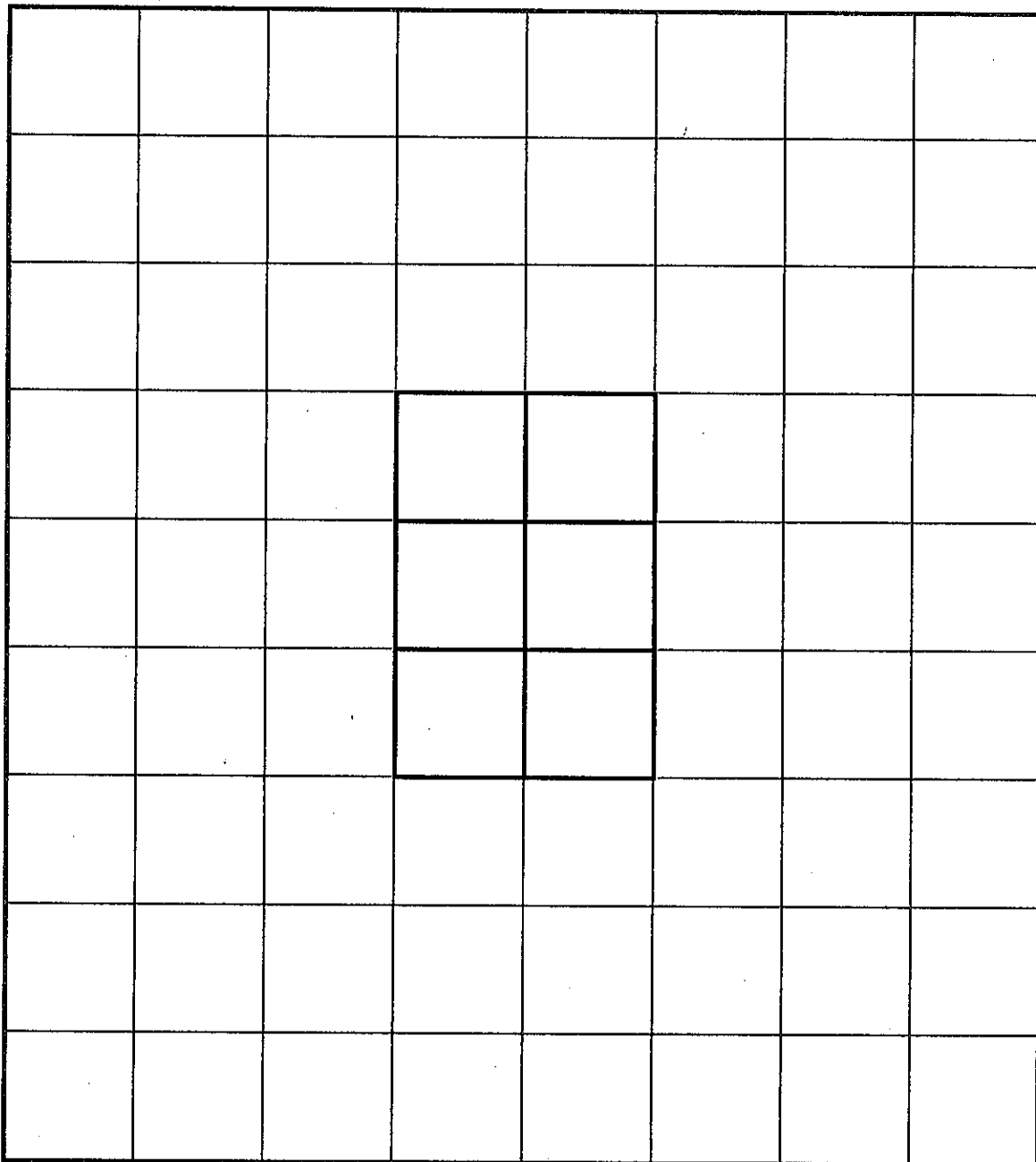


A 12-Cube Box Pattern

The dark squares make the bottom of a rectangular box that contains exactly 12 cubes. The box has no top. Draw the sides to finish the pattern for the box. (Challenge: Can you find all the patterns that would make a box that holds 12 cubes?)

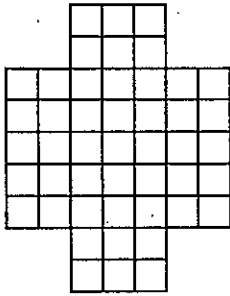

NOTE Students have been designing patterns for boxes (with no tops).

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Finding Volume of More Boxes

How many cubes fit in each box? First, determine the answer without building the box. Then build a box and use cubes to check. For Boxes 2 and 3, also draw the pattern.

	Pattern	Picture	First Answer	Actual Answer
Box 1			_____	_____
Box 2			_____	_____
Box 3		<p>The bottom of the box is 4 units by 5 units. The box is 3 units high.</p>	_____	_____

More Building Up

Use graph paper to build a pattern for the boxes described below. You may need more than one sheet of graph paper to complete the pattern.

1. The bottom of the box is 4×3 , and the box will hold 36 cubes.
2. The bottom of the box is 3×3 , and the box will hold 45 cubes.
3. The bottom of the box is 6×4 , and the box will hold 48 cubes.

Challenge: For each problem, can you find other boxes that will hold the same number of cubes?

Double the Number of Cubes

1. You have a box that is 2 by 3 by 4. How many cubes does it hold? How do you know?
2. The factory wants you to build a box that will hold twice as many cubes. Find the dimensions of a box that contains two times as many cubes as a box that is 2 by 3 by 4. Use the space below to draw the box.
3. How many cubes will this new box contain? How do you know?
4. Is the box you found the only box that works? How do you know?

Challenge: See how many boxes you can find that will hold two times as many cubes as a 2 by 3 by 4 box. Show them on a separate sheet of paper.

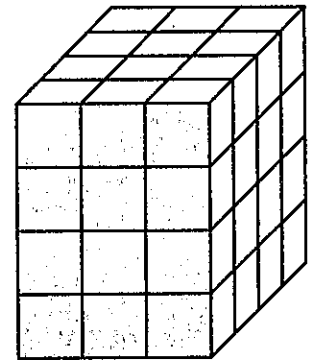
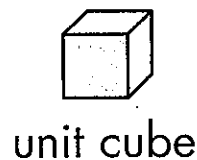


Finding the Number of Cubes

1. How many unit cubes are in this package?

NOTE Students have been designing patterns for boxes and finding the volume of these boxes. Allow them to use their own strategies for finding the volume of this box.

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Use the grid on the next page to draw a pattern for this package. Your pattern for the box should completely cover all but the top of the package. The package should completely fill the box.

2. Now how many cubes do you think are in the package?

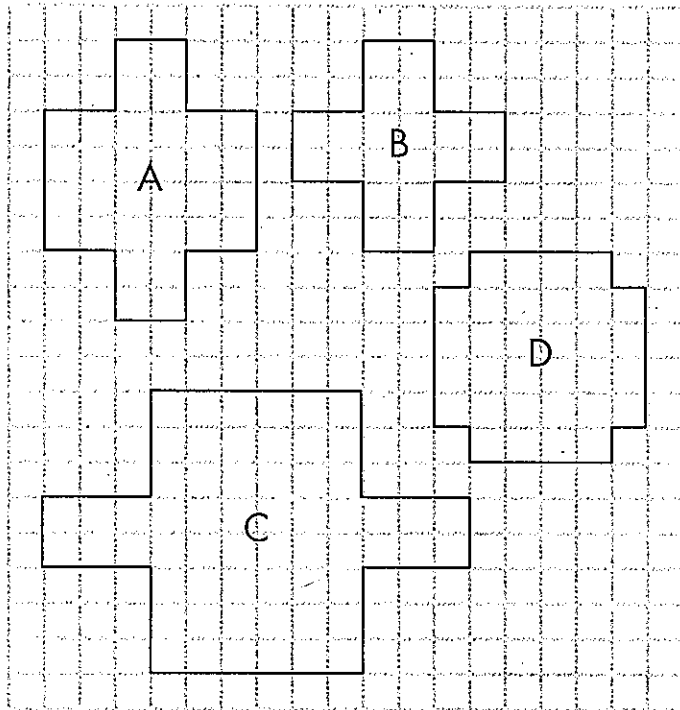


All Kinds of Boxes

These patterns make open boxes:

NOTE Students determine the volume of boxes from 2-dimensional patterns.

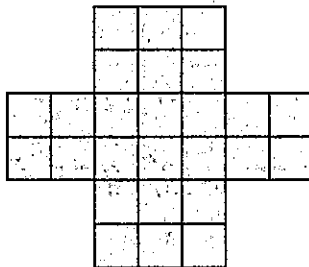
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1. Which holds the greatest number of cubes? _____
2. Which box is tallest? _____ Which box is shortest? _____

Ongoing Review

3. How many cubes like the one shown would fit in a box with this pattern?



- A.** 26 **B.** 14 **C.** 12 **D.** 6

Converting Weights and Masses

In Problems 1 and 2, write the missing number in the blank. Then complete the table.

1. 1 pound = _____ ounces

2. 1 kilogram = _____ grams

Pounds	Ounces
1	
2	
3	
4	64
5	

Kilograms	Grams
1	
2	
3	3,000
4	
5	

In Problems 3–7, convert the weights and masses.

3. 8 pounds = _____ ounces

4. 9 kilograms = _____ grams

5. 13 kilograms = _____ grams

6. 20 pounds = _____ ounces

7. 3 pounds 9 ounces = _____ ounces

8. Which is heavier, 7 pounds or 160 ounces? How do you know?

9. Which is greater, 20 kilograms or 2,000 grams? How do you know?

More Conversions

In Problems 1 and 2, write the missing number in the blank. Then complete the table.

1. 1 liter = _____ milliliters

2. 1 minute = _____ seconds

Liters	Milliliters
1	
2	
3	
4	4,000
5	

Minutes	Seconds
1	
2	
3	180
4	
5	

In Problems 3–11, convert each capacity or time.

3. 8 liters = _____ milliliters

4. 6 minutes = _____ seconds

5. 5 gallons = _____ quarts

6. 10 pints = _____ cups

7. 10 hours = _____ minutes

8. 25 liters = _____ milliliters

9. 7 quarts = _____ pints

10. 30 minutes = _____ seconds

11. 3 hours 15 minutes = _____ minutes

12. How many seconds are in an hour? Explain how you figured it out.



Converting Measurements

Solve each riddle.

NOTE Students convert measurements from larger units to smaller units.

1. I am 1,000 times as big as a milliliter.

What am I? _____

2. I am 60 times as big as a minute.

What am I? _____

3. I am 1,000 times as big as a gram.

What am I? _____

Measurement Equivalents

Weight and Mass

1 pound = 16 ounces

1 kilogram = 1,000 grams

Capacity

1 gallon = 4 quarts

1 liter = 1,000 milliliters

Time

1 minute = 60 seconds

1 hour = 60 minutes

In Problems 4–10, complete each conversion.

4. 8 gallons = _____ quarts

5. 11 liters = _____ milliliters

6. 4 kilograms = _____ grams

7. 3 pounds = _____ ounces

8. 3 minutes = _____ seconds

9. 7 hours = _____ minutes

10. 8 minutes 14 seconds = _____ seconds

11. Circle the greater capacity.

8,000 milliliters

12 liters

Measurement Problems

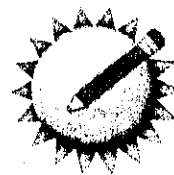
Solve each problem and show your solution.

1. Lucy bought 3 quarts of chocolate milk and 2 gallons of white milk. How many quarts of milk did Lucy buy in all?
2. The mass of a rabbit is 4 kilograms. The mass of a mouse is 45 grams. How much greater is the mass of the rabbit?
3. Noemi poured 1.2 liters of water into a 3-liter pot. How much more water should be added to completely fill the pot?
4. There are $2\frac{1}{2}$ pints of apple juice and $1\frac{1}{2}$ pints of grape juice in the refrigerator. How much juice is there in all?
5. Mr. Dakarian bought 3 quarts of orange juice. If his family drinks 3 cups of orange juice each day, how many days will the orange juice last?

Time Problems

Solve each problem and show your work.

1. Ramona went on a long hike. She started her hike at 8:00 A.M. and hiked for 2 hours 45 minutes. When did Ramona finish her hike?
2. A television station ran a 2-minute commercial about pet food. It was followed by a 90-second commercial about an airline. Which commercial was longer? How much longer was it?
3. A party started at 7:30 P.M. and ended at 9:45 P.M. How long did the party last?
4. Mr. Chin wants to get 8 hours of sleep. If he needs to get up at 6:15 A.M., when should he go to sleep?
5. Ms. Curtis is driving 5 hours to visit her aunt. She drove for $\frac{2}{5}$ of the time and then stopped for lunch. For how many hours has she already driven?



More Measurement Problems

NOTE Students use the four operations to solve problems involving measurements.

Solve each problem and show your work.

1. Marisol used $2\frac{3}{4}$ gallons of paint to paint the walls of her bedroom and $\frac{3}{4}$ of a gallon to paint the ceiling. How much paint did she use in all?
2. Jill went shopping from 3:45 P.M. to 5:00 P.M. How long did she shop?
3. The mass of a melon is 2 kilograms. The mass of a plum is 75 grams. How much greater is the mass of the melon? (1 kilogram = 1,000 grams)
4. Bill went to the museum at 11:30 A.M. He stayed for $3\frac{1}{2}$ hours. When did he leave?
5. Terrell made 4 pints of soup. How many 2-cup servings of soup would this be? (1 pint = 2 cups)



More Measurement Conversions

NOTE Students convert measurements from larger units to smaller units.

In Problems 1–4, write the missing number in the blank. Then complete the table.

1. 1 liter = _____ milliliters

Liters	Milliliters
3	3,000
4	
5	
9	
20	

2. 1 hour = _____ minutes

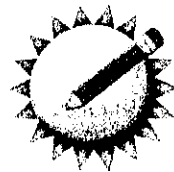
Hours	Minutes
4	240
5	
6	
10	
12	

3. 1 kilogram = _____ grams

Kilograms	Grams
2	2,000
3	
5	
8	
15	

4. 1 pound = _____ ounces

Pounds	Ounces
3	48
6	
8	128
10	
20	



NOTE Students use the four operations to solve problems involving measurements.

Solving Measurement Problems

Solve each problem and show your work.

1. A large canned ham has a mass of 3 kilograms.
A small canned ham has a mass of 1.5 kilograms.
What is the total mass of the two canned hams?
2. Mrs. Corelli worked in her garden from 1:30 P.M. to 3:15 P.M. How long did she work in her garden?
3. How many 5-minute cartoons can be shown in one hour? (The cartoons are shown one at a time.)
4. Enrique used $3\frac{1}{2}$ gallons of apple juice and $2\frac{1}{2}$ gallons of orange juice to make some fruit punch for a school picnic. How many quarts of juice are in the punch?
5. One fish bowl holds 10 liters of water and another holds 7,500 milliliters of water. Which fish bowl holds more water? How much more? (1 liter = 1,000 milliliters)



American Landmarks

Identify the silhouettes of the American symbols and landmarks listed below.

NOTE Students solve real-world problems involving the math content of this unit.

SMH 122-123

White House Liberty Bell The Alamo Mississippi Riverboat	Lincoln Memorial Gateway Arch Golden Gate Bridge The Space Needle	Empire State Building Statue of Liberty
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