



**SUMMER ACADEMY**  
ATLANTA PUBLIC SCHOOLS



# Grade 6 Math Student Booklet

Name: \_\_\_\_\_

School: \_\_\_\_\_

Teacher: \_\_\_\_\_

130 Trinity Avenue, SW  
Atlanta, GA 30303



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# Secondary Student Mathematics Interest Inventory

Student Name (First and Last): \_\_\_\_\_

Teacher: \_\_\_\_\_ School: \_\_\_\_\_

Student ID: Write in and bubble the 6-digit district ID number						Current Grade Level	Gender
0	0	0	0	0	0	6th	Male
1	1	1	1	1	1	7th	Female
2	2	2	2	2	2	8th	
3	3	3	3	3	3	9th	
4	4	4	4	4	4		
5	5	5	5	5	5		
6	6	6	6	6	6		
7	7	7	7	7	7		
8	8	8	8	8	8		
9	9	9	9	9	9		

**Directions:**

We are trying to understand what students think about the work they do for mathematics class. On the following pages are some examples of what students might think. Please give us your rating for each question.

**Different students have different interests, so there are NO right or wrong answers.**

Your answers will **NOT** be used towards your grade. Please answer these questions honestly, and tell us what you **really** think.

**Practice Questions**

Strongly  
DISAGREE      Neutral      Strongly  
AGREE

1. How good at science are you? ..... (1) (2) (3) (4) (5)

2. How good at reading are you? ..... (1) (2) (3) (4) (5)

Please bubble in the choice that best describes what you think. You can use a pen or pencil. If you make a mistake, either erase it or cross it out completely and bubble the correct choice.

### How much do you agree or disagree with the following statements?

	Strongly DISAGREE		Neutral		Strongly AGREE
1. I enjoy studying math.....	1	2	3	4	5
2. Math is very hard for me.....	1	2	3	4	5
3. Doing math is easy for me.....	1	2	3	4	5
4. I enjoy playing math games.....	1	2	3	4	5
5. I do math problems on my own “just for fun.”.....	1	2	3	4	5
6. I enjoy doing math puzzles.....	1	2	3	4	5
7. I look forward to learning new math.....	1	2	3	4	5
8. I hate math.....	1	2	3	4	5
9. Math comes easily to me.....	1	2	3	4	5
10. I love math.....	1	2	3	4	5
11. I can tell if my answers in math makes sense.....	1	2	3	4	5
12. I can solve difficult math problems.....	1	2	3	4	5
13. Math is boring.....	1	2	3	4	5
14. Math is confusing to me.....	1	2	3	4	5
15. Math is fun.....	1	2	3	4	5
16. I am really good at math.....	1	2	3	4	5
17. I understand math.....	1	2	3	4	5
18. Solving math problems is fun. ....	1	2	3	4	5

Please bubble in the choice that best describes what you think. You can use a pen or pencil. If you make a mistake, either erase it or cross it out completely and bubble the correct choice.

## How much do you agree or disagree with the following statements?

	Strongly <b>DISAGREE</b>		Neutral		Strongly <b>AGREE</b>
22. When working on math, I want to stop and start working on Something else.....	(1)	(2)	(3)	(4)	(5)
23. I give up easily when working on math.....	(1)	(2)	(3)	(4)	(5)
24. I like to answer questions in math class.....	(1)	(2)	(3)	(4)	(5)
25. I feel excited when a new math topic is announced.....	(1)	(2)	(3)	(4)	(5)
26. I struggle with math.....	(1)	(2)	(3)	(4)	(5)
27. I work on math in my spare time.....	(1)	(2)	(3)	(4)	(5)

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## Pepe's Party

This problem gives you the chance to:

- use numbers and prices in a real situation
- 

Pepe is having a party.

There will be 20 people at the party.

Here is the price list for things Pepe needs.

<b>Party supplies!</b>	
Plastic knife, fork, and spoon set	30¢
Package of 10 paper plates	\$2.75
Package of 5 paper cups	\$1.50

1. Complete the table to show the prices for 20 plastic knives, 20 forks, and 20 spoons, 20 paper plates and 20 paper cups.

	<b>Number of packages</b>	<b>Price</b>
Plastic knife, fork, and spoon set		\$
Paper plates		\$
Paper cups		\$

Show your calculations.

2. Pepe also wants to buy 20 party hats.

A package of 8 hats costs \$1.50. The shop will not split a package.

The price of 1 hat is 30¢.

What is the cheapest price for 20 hats?                      \$ \_\_\_\_\_

Explain how you figured it out.

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# CCGPS Frameworks Student Edition

## Mathematics

6<sup>th</sup> Grade

Unit 1: Number System Fluency



**Dr. John D. Barge, State School Superintendent**  
*"Making Education Work for All Georgians"*

**Unit 1**  
**Number System Fluency**

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- data usage and representations

## SELECTED TERMS AND SYMBOLS

The following terms and symbols are often misunderstood. These concepts are not an inclusive list and should not be taught in isolation. However, due to evidence of frequent difficulty and misunderstanding associated with these concepts, instructors should pay particular attention to them and how their students are able to explain and apply them.

**The definitions below are for teacher reference only and are not to be memorized by the students.** Students should explore these concepts using models and real life examples. Students should understand the concepts involved and be able to recognize and/or demonstrate them with words, models, pictures, or numbers.

The websites below are interactive and include a math glossary suitable for middle school children. **Note – At the middle school level, different sources use different definitions. Please preview any website for alignment to the definitions given in the frameworks.**

<http://www.amathsdictionaryforkids.com/>

This web site has activities to help students more fully understand and retain new vocabulary

<http://intermath.coe.uga.edu/dictionary/homepg.asp>

Definitions and activities for these and other terms can be found on the Intermath website. Intermath is geared towards middle and high school students.

- **Algorithm:** a step-by-step solution to a problem.
- **Difference:** The amount left after one number is subtracted from another number.
- **Distributive Property:** The sum of two addends multiplied by a number is the sum of the product of each addend and the number.
- **Dividend:** A number that is divided by another number.
- **Divisor:** A number by which another number is to be divided.
- **Factor:** When two or more integers are multiplied, each number is a factor of the product. "To factor" means to write the number or term as a product of its factors.
- **Greatest Common Factor:** The largest factor that two or more numbers have in common.

- **Least Common Multiple:** The smallest multiple (other than zero) that two or more numbers have in common.
- **Minuend:** The number that is to be subtracted from.
- **Multiple:** The product of a given whole number and an integer.
- **Quotient:** A number that is the result of division.
- **Reciprocal:** Two numbers whose product is 1.
- **Sum:** The number you get by adding two or more numbers together
- **Subtrahend:** The number that is to be subtracted.
- **Product:** A number that is the result of multiplication.

**Task: Dividing Fractions**  
**Exploration**

Use a model (e.g., manipulative materials, pictures, number line) to find the answers to the problems below. Be sure to write a number sentence to illustrate each situation. Think about how the meaning of the operation is a bit different in the two problems.

- A. In preparing to make hair bows for friends, Samantha realizes she needs  $\frac{2}{3}$  yard of ribbon for each bow. She has 2 yards of ribbon. Does she have enough ribbon for four bows?
- B. Samantha wants to make some hair bows for her friends. She has 2 yards of ribbon to be shared equally between 3 hair bows. How much ribbon will she use for each bow?

**Task: Fractional Divisors**  
**Exploration**

**Partitive Interpretation of Division with Fractional Divisors**

Use a model (e.g., manipulative materials, pictures, number line) to find the answers to the problems below. Be sure to write a number sentence to illustrate each situation.

Michael's mom paid \$2.40 for a  $\frac{3}{4}$  - pound box of cereal. How much is that per pound?

Melitta found out that if she walks really fast during her morning exercise, she can cover  $2\frac{1}{2}$  miles in  $\frac{3}{4}$  of an hour. How fast is she walking in miles per hour?

**Measurement Interpretation of Division with Fractional Divisors**

Use a model (e.g., manipulative materials, pictures, number line) to find the answers to the problems below. Be sure to write a number sentence to illustrate each situation.

It's your birthday and you are going to have a party. From the grocery store you get 6 pints of ice cream. If you serve  $\frac{3}{4}$  of a pint of ice cream to each of your guests, how many guests can be served?

Sam is a landscaper. He found that he had  $2\frac{1}{4}$  gallons of liquid fertilizer concentrate. It takes  $\frac{3}{4}$  gallon to make a tank of mixed fertilizer. How many tankfuls can he mix?

**Task: Understanding Algorithms**

**Exploration**

Consider the expression  $\frac{5}{3} \div \frac{1}{2}$ . Using words explain what this problem means. Restate the expression with common denominators then solve the problem. Draw pictures first and then write number sentences.

Now try  $1\frac{2}{3} \div \frac{3}{4}$  using the common-denominator approach.

Complete the following set of problems using the methods we have been using for the last several days. Make a table of your answers to each and look for a pattern.

- |                                   |  |
|-----------------------------------|--|
| $3 \div \frac{1}{2} =$            | How many servings of $\frac{1}{2}$ in 3 containers?              |
| $5 \div \frac{1}{4} =$            | How many servings of $\frac{1}{4}$ in 5 containers?              |
| $3\frac{3}{4} \div \frac{1}{2} =$ | How many servings of $\frac{1}{2}$ in $3\frac{3}{4}$ containers? |
| $6 \div \frac{1}{3} =$            | How many servings of $\frac{1}{3}$ in 6 containers?              |
| $8 \div \frac{1}{5} =$            | How many servings of $\frac{1}{5}$ in 8 containers?              |

Now try this set of problems:

$$\begin{array}{l} 5 \div \frac{3}{4} \\ 6 \div \frac{2}{3} \\ 8 \div \frac{2}{5} \end{array}$$

Compare your responses from the second set of problems to the corresponding problems in the first set. What do you see?

Finally, try this partitioning problem:

You have  $1\frac{1}{2}$  oranges, which is  $\frac{3}{5}$  of an adult serving. How many oranges (and parts of oranges) make up 1 adult serving?



**Task: DIY (Do It yourself)**

**Exploration**

With your group write a story problem for each of the expressions shown below.

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

$$\frac{11}{12} \div \frac{1}{4}$$

$$\frac{2}{3} \div \frac{3}{4}$$

**Task: Estimation is the Root of Fluency – Division with Decimals**

Consider the number sentence  $146 \div 7 = 20857$ , is it true? If not use what you know about estimation to determine the correct placement of the decimal point. Justify your solution

The task is to use only this information and estimation to give a fairly precise answer to each of the following: Be sure to justify each of your solutions

$146 \div 0.7$

$1.46 \div 7$

$14.6 \div 0.7$

$1460 \div 70$

---

## Breakfast Time

This problem gives you the chance to:

- calculate costs and charges for a group
- 

1. Linda had breakfast in a café.

It cost \$12.40. She paid with a \$20 bill.

How much change did Linda get? \$ \_\_\_\_\_

Show how you figured it out.



2.

<p style="text-align: center;"><b>Basic Continental Breakfast</b> <b>\$6.40</b> <b>each</b></p>
---

A group of nine people had the basic continental breakfast.

How much did they pay in all? \$ \_\_\_\_\_

Show your work.

3. A different group of people had the basic continental breakfast.

They paid \$32 in all.

How many people were in the group? \_\_\_\_\_

Show how you figured it out.

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# ON THE LINE

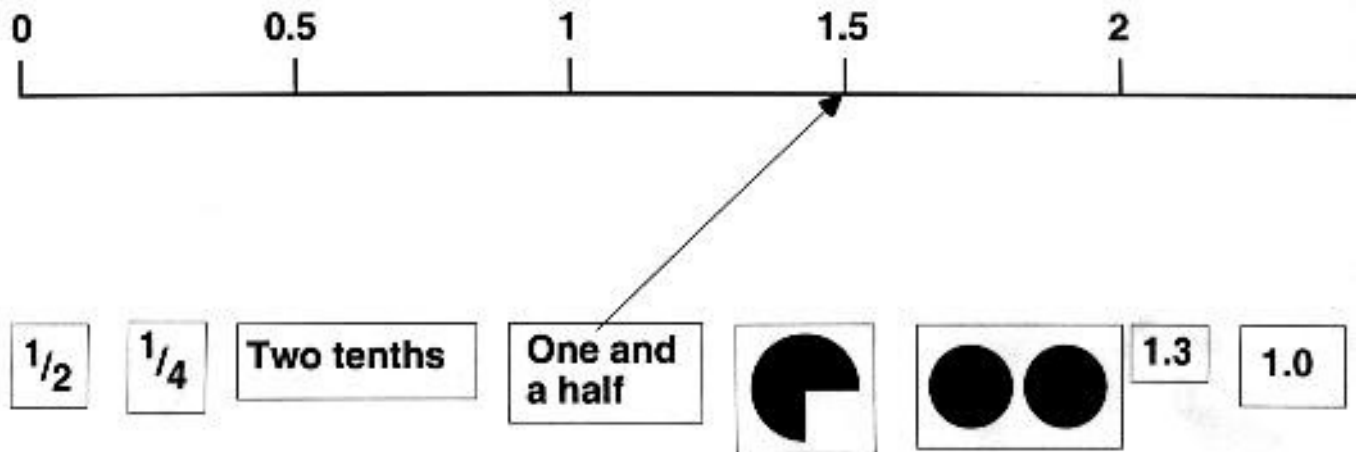
This problem gives you the chance to:

- represent simple fractions and decimals on a number line
- explain the meaning of a decimal digit

1. Here is a number line.

Draw arrows to show where each box should go.

**One and a half** has been done for you.



2. Your friend finds it hard to understand decimals.

She asks "In a number like 2.4 what does the 4 really mean?"

Write a note to help her.

↙ This number is 2.4

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## Calculations

This problem gives you the chance to:

- show understanding of calculations
- 

1. Draw a circle around each calculation that has the same answer as  $25 \div 2$ .

Half of 25

$$\frac{25}{2}$$

$$25 \div \frac{1}{2}$$

$$25 \times 0.5$$

$$25 \times \frac{1}{2}$$

$$2 \div 25$$

2. Which of the situations below have the same answer as  $25 \div 2$ ?

Check ( $\checkmark$ ) the correct ones.

Cross (**X**) the incorrect ones.

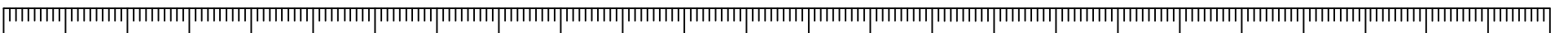
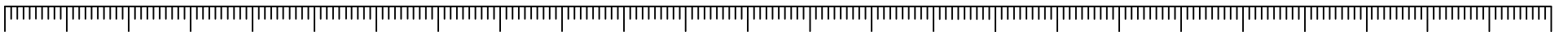
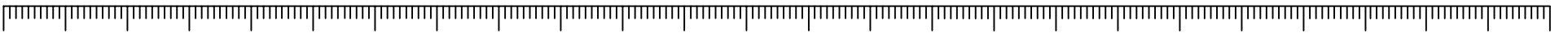
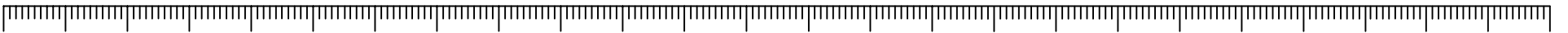
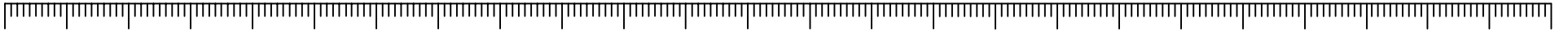
$\checkmark$ or <b>X</b>
--------------------------

The cost in dollars each person pays if two people share the cost of a \$25 meal.	
The number of miles traveled in two hours at 25 miles an hour.	
The amount in pounds each person gets when two pounds of candy is shared by 25 people.	
The weight in pounds of 25 parcels each weighing half a pound.	

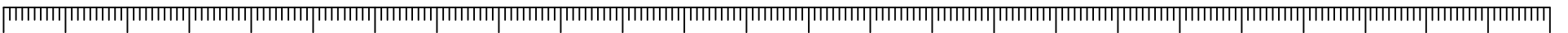
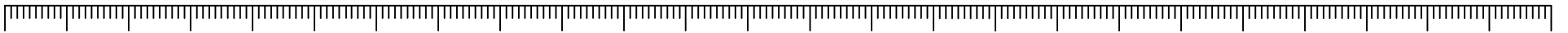
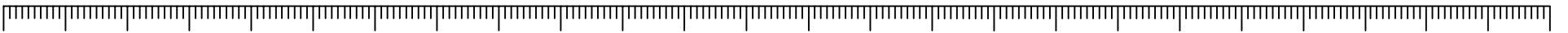
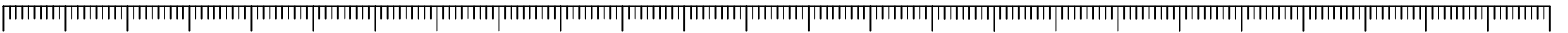
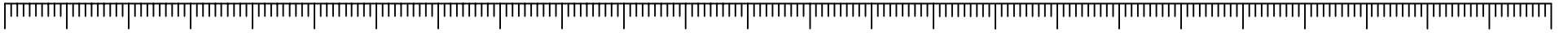
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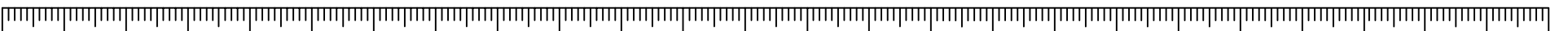
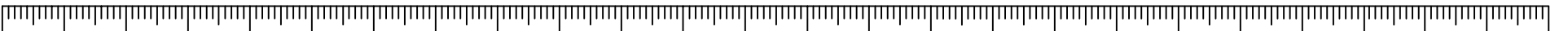
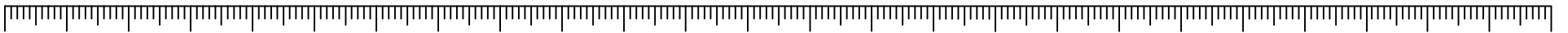
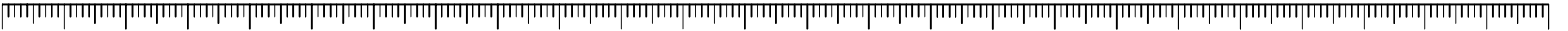
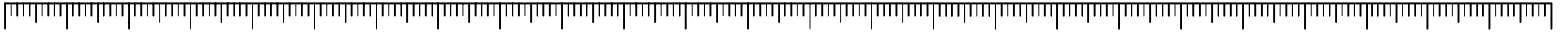
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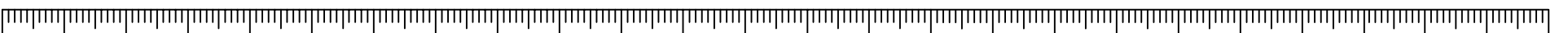
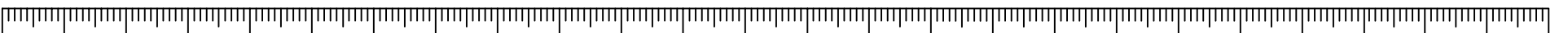
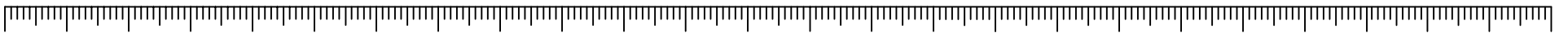
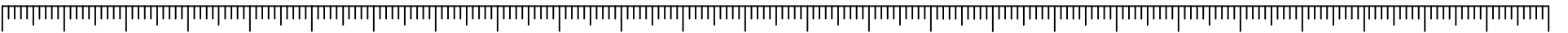
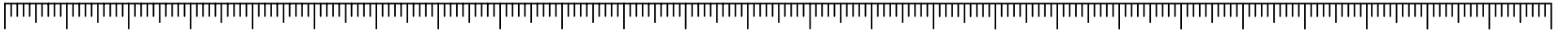
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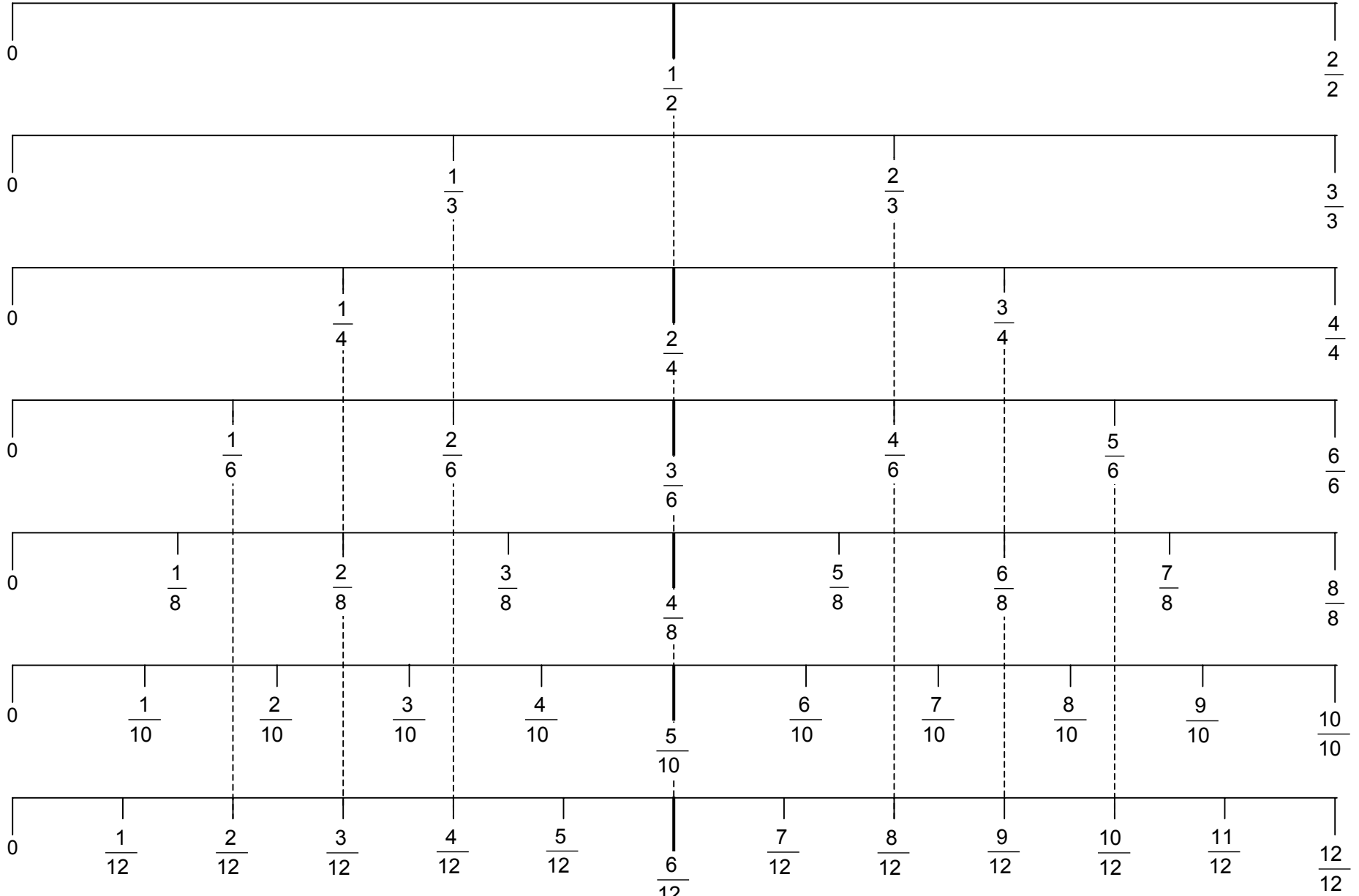
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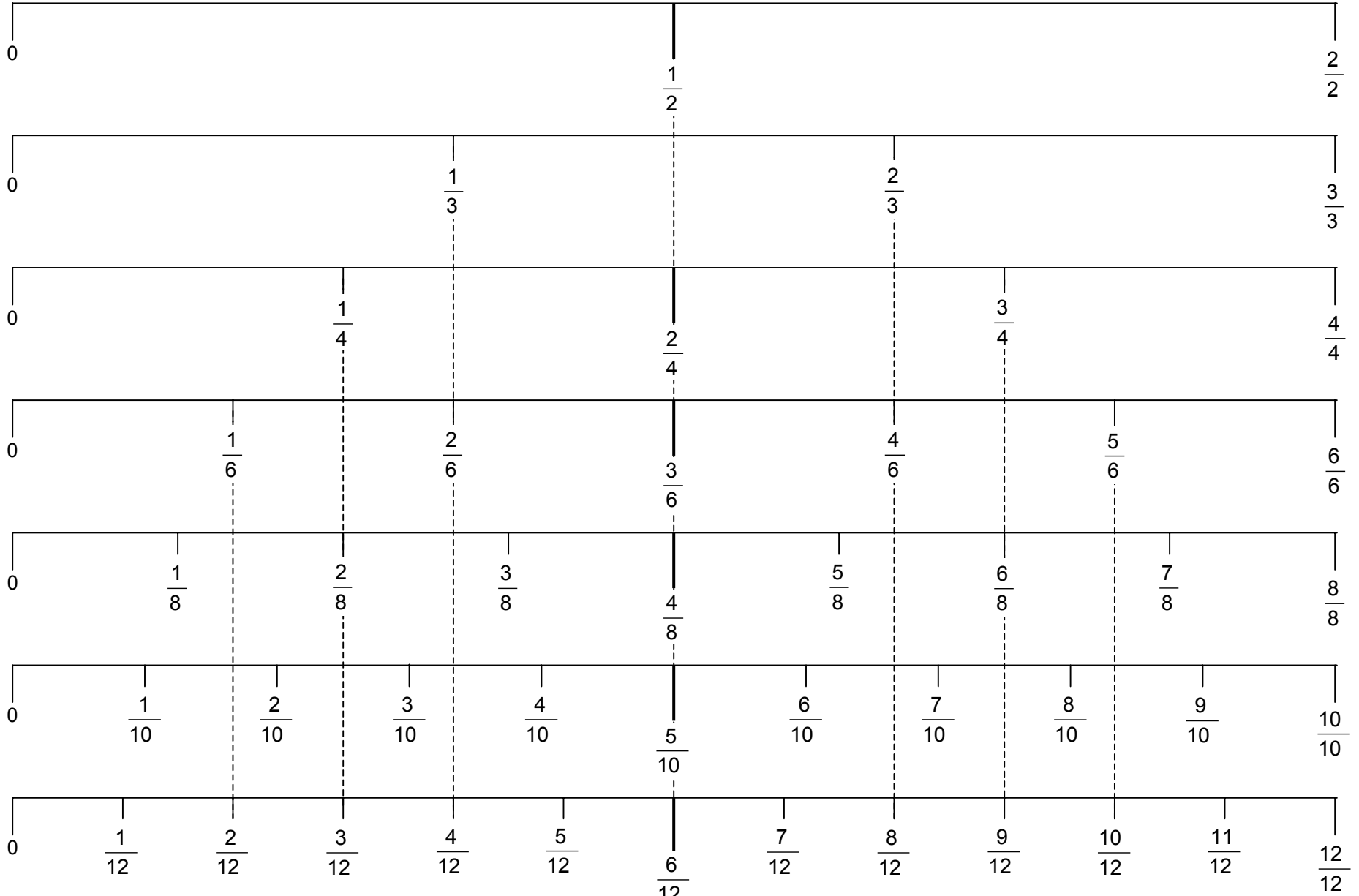
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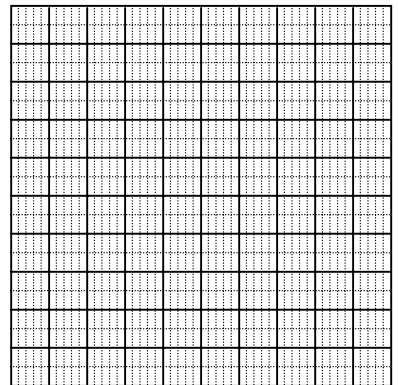
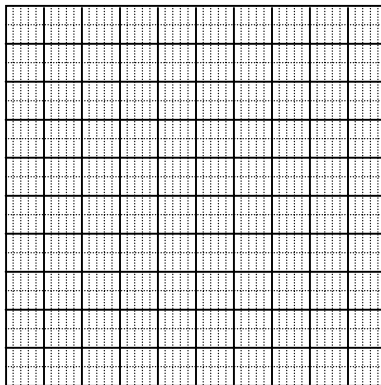
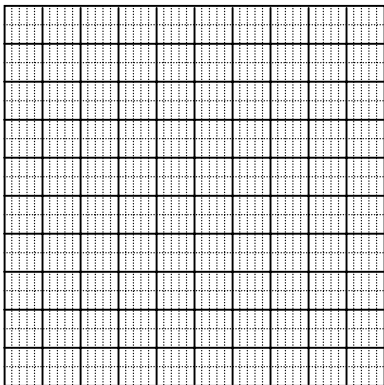
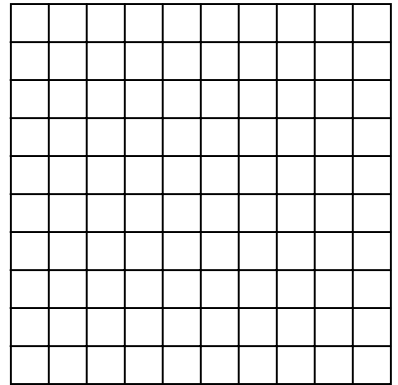
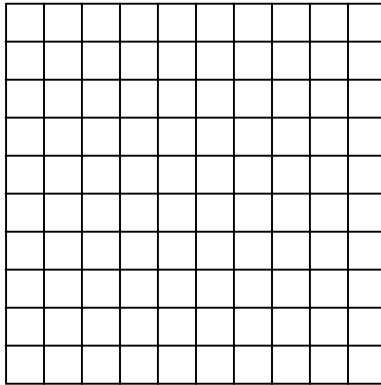
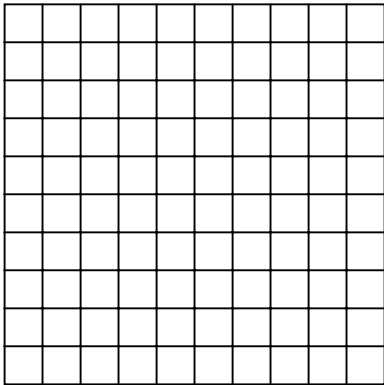
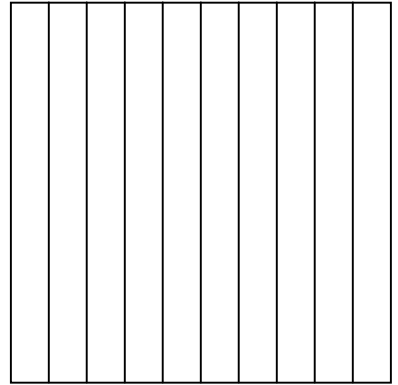
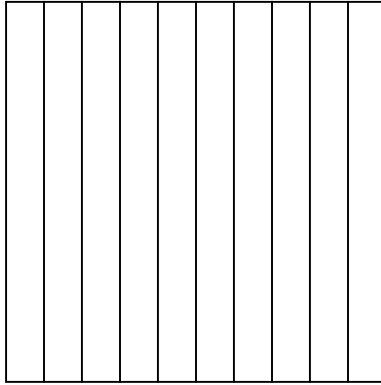
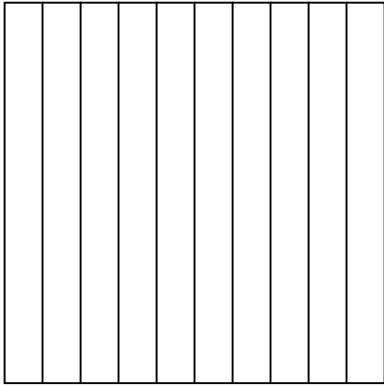
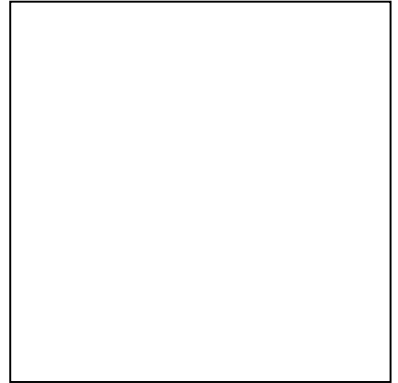
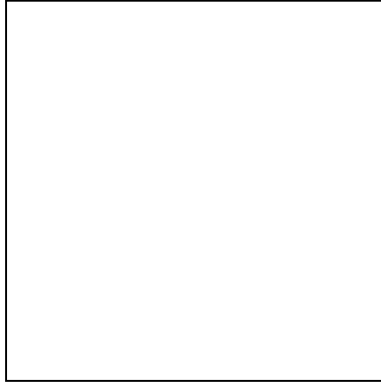
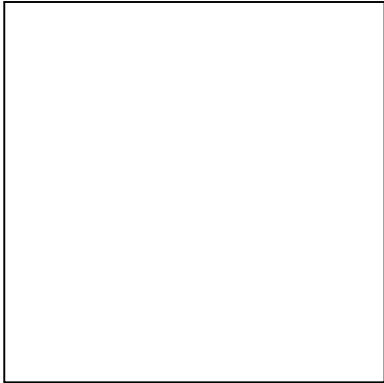
# Fraction Number Lines 1



# Fraction Number Lines 1



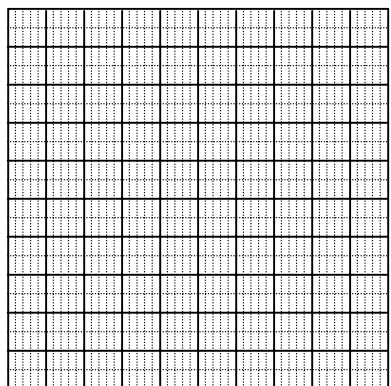
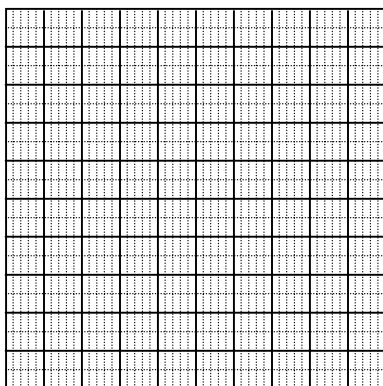
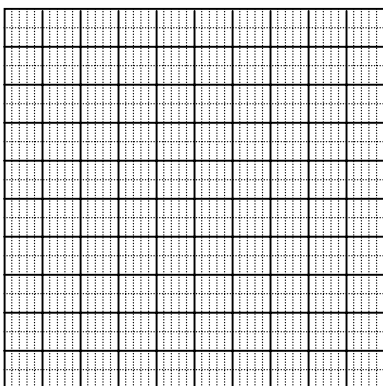
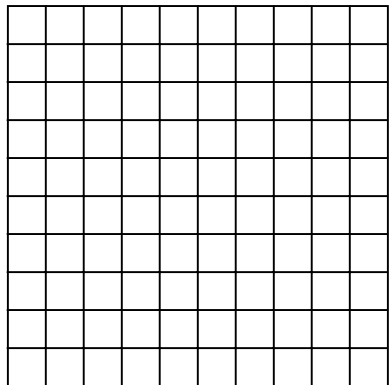
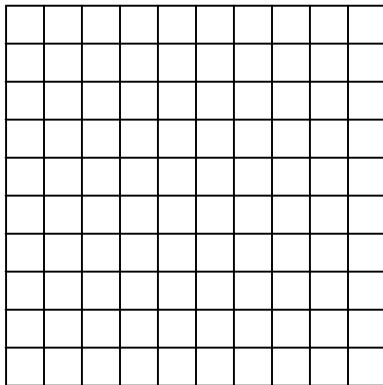
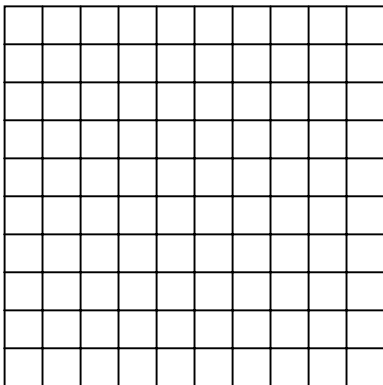
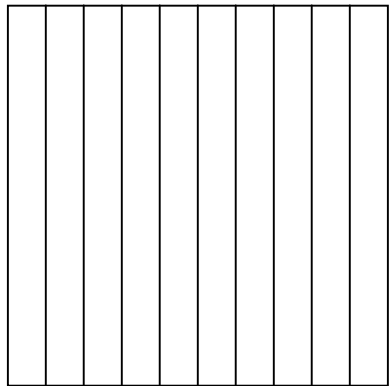
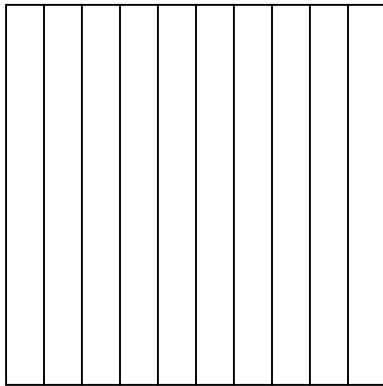
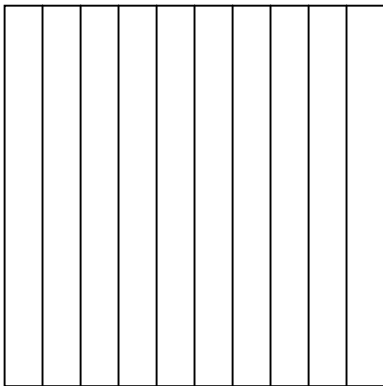
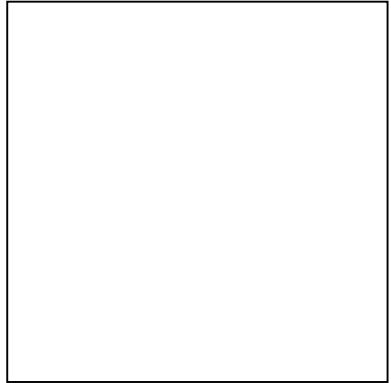
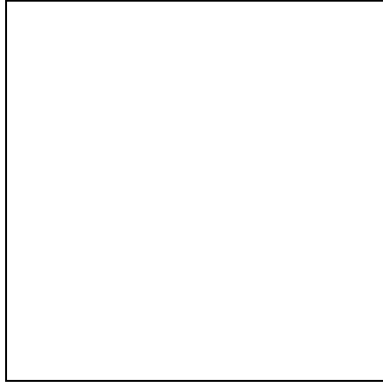
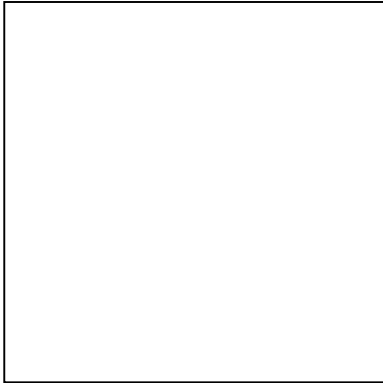
# Decimal Squares



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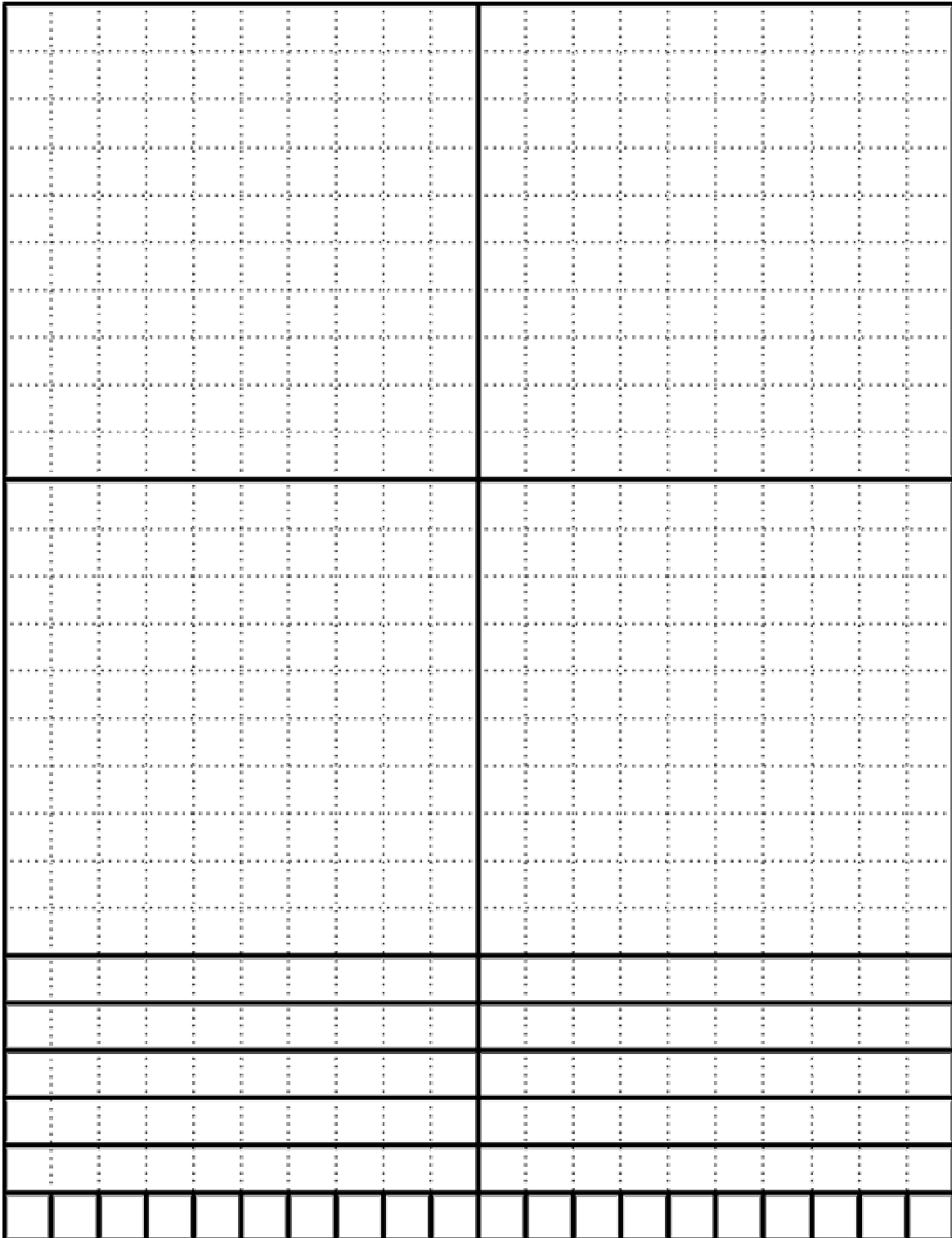


# Decimal Squares



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**Base 10 Blocks** - Cut along the solid lines!



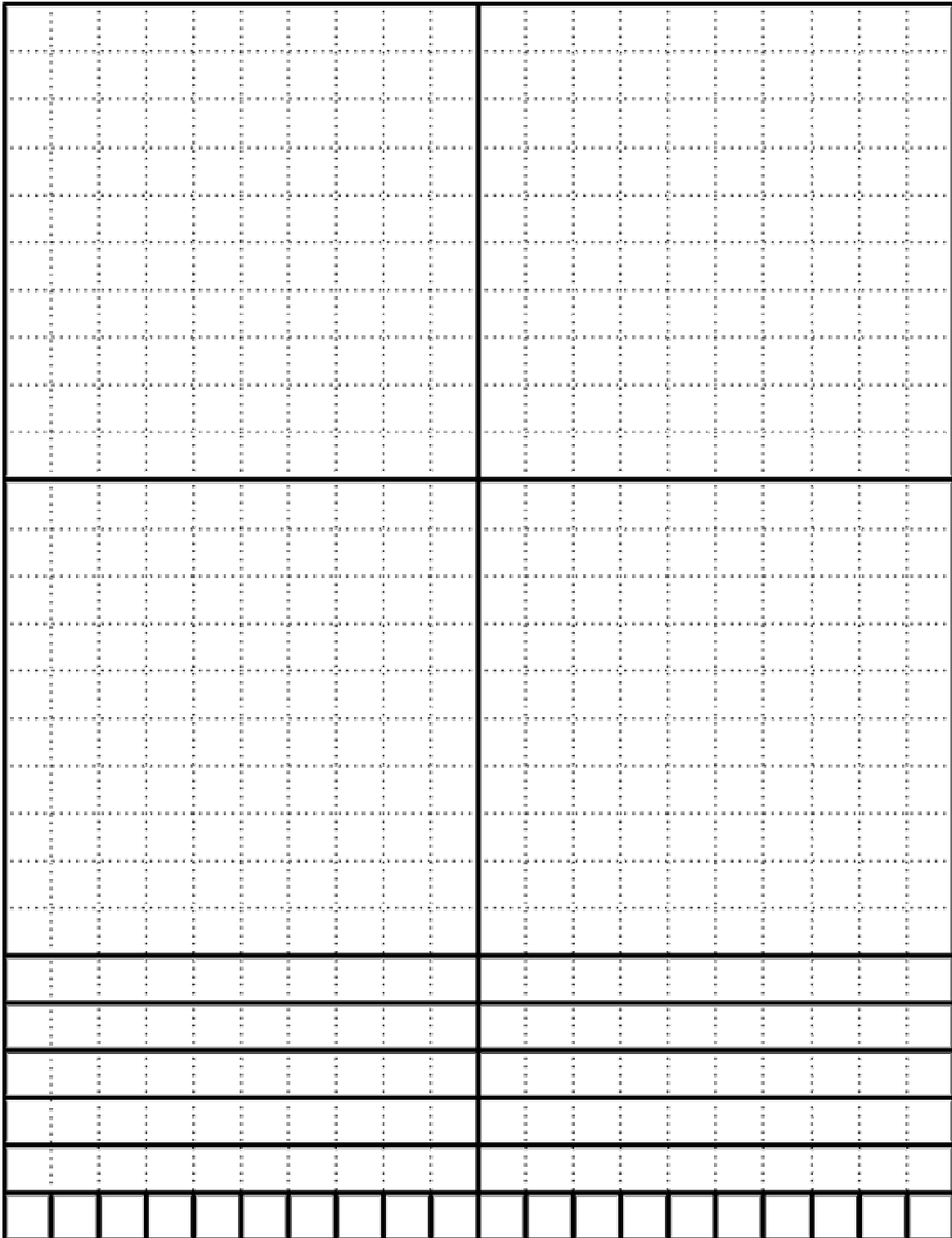
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**Base 10 Blocks - Cut along the solid lines!**



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