CONTACT & INSIGHT LESSONS / VOLUMES 1 & 2

BLACKLINE MASTERS

Salem, Oregon

Blackline Index

The Math Learning Center grants permission to classroom teachers to reproduce the blackline masters in appropriate quantities for their classroom use.

*Fraction Bars® is a registered trademark of Scott Resources, Inc.

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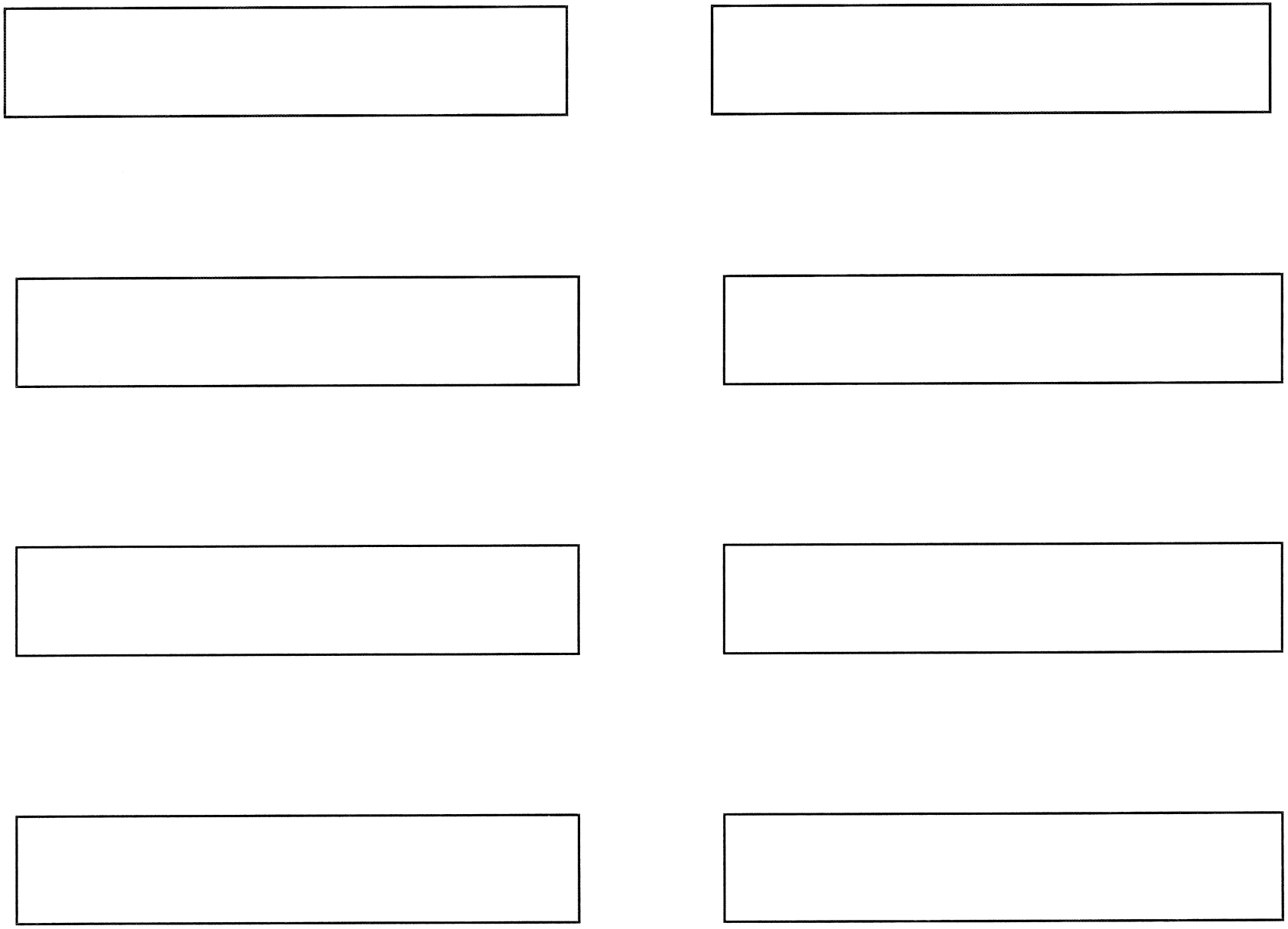
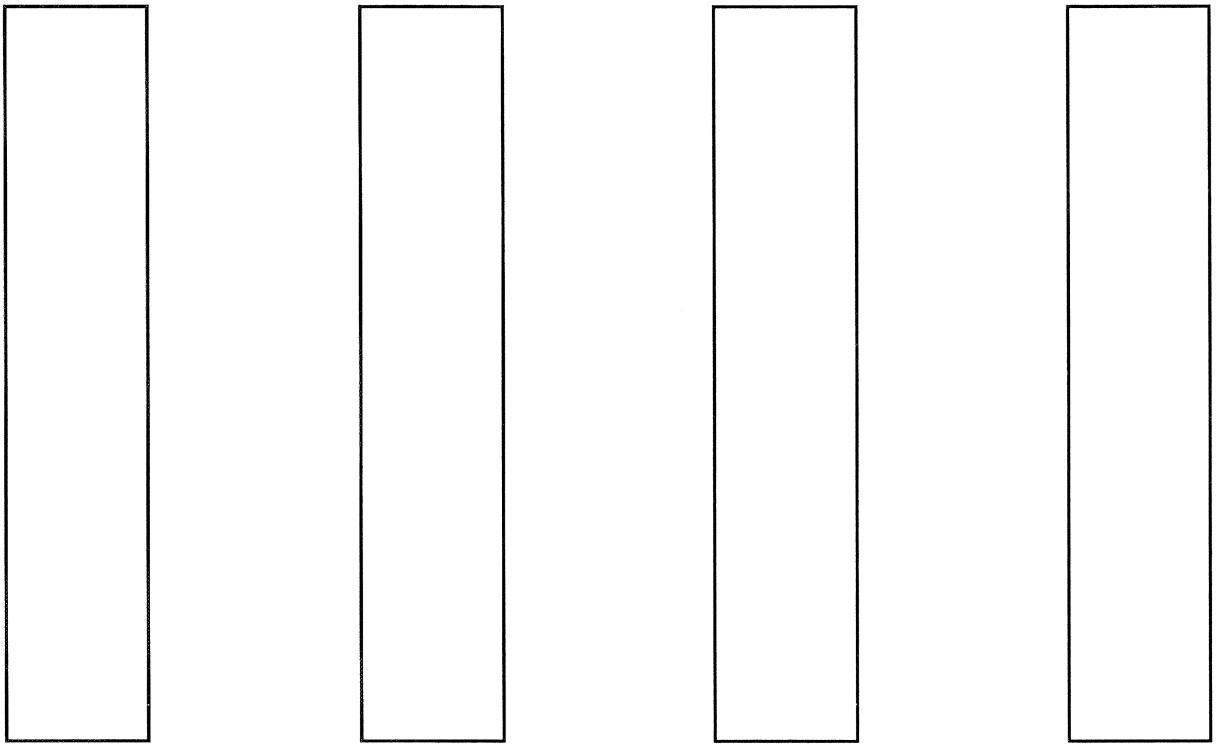
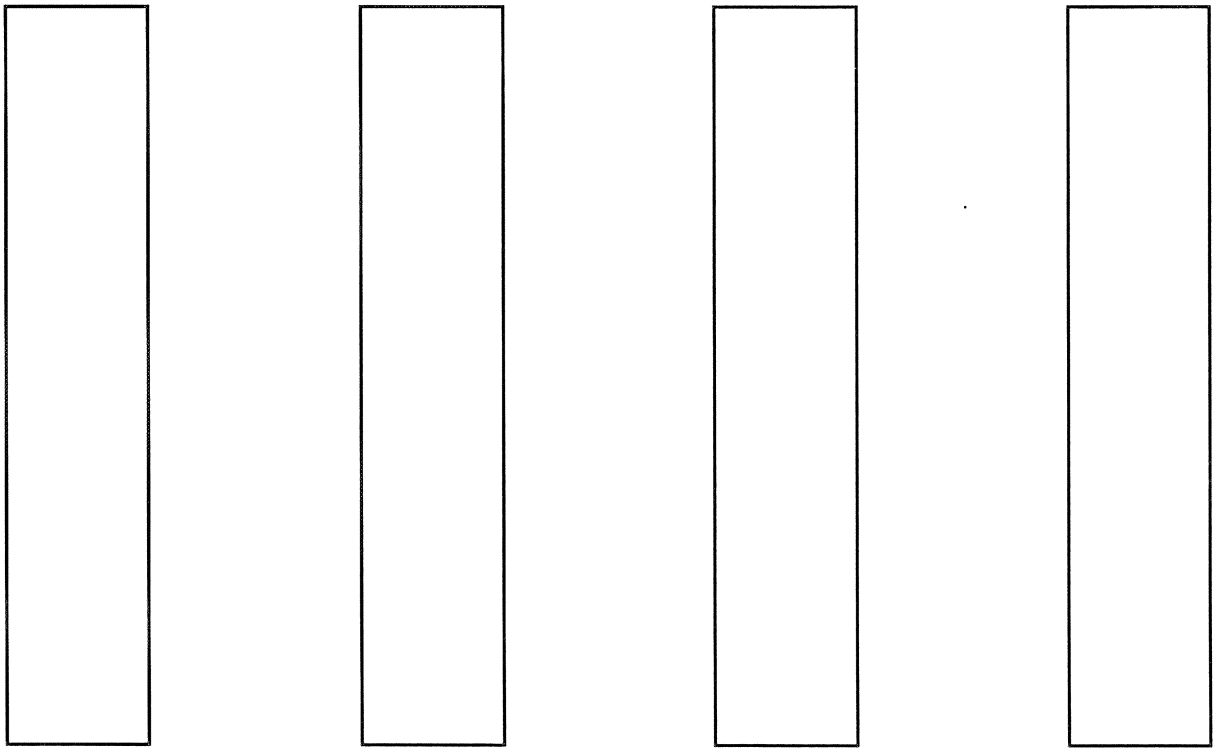
Friendly Fractions







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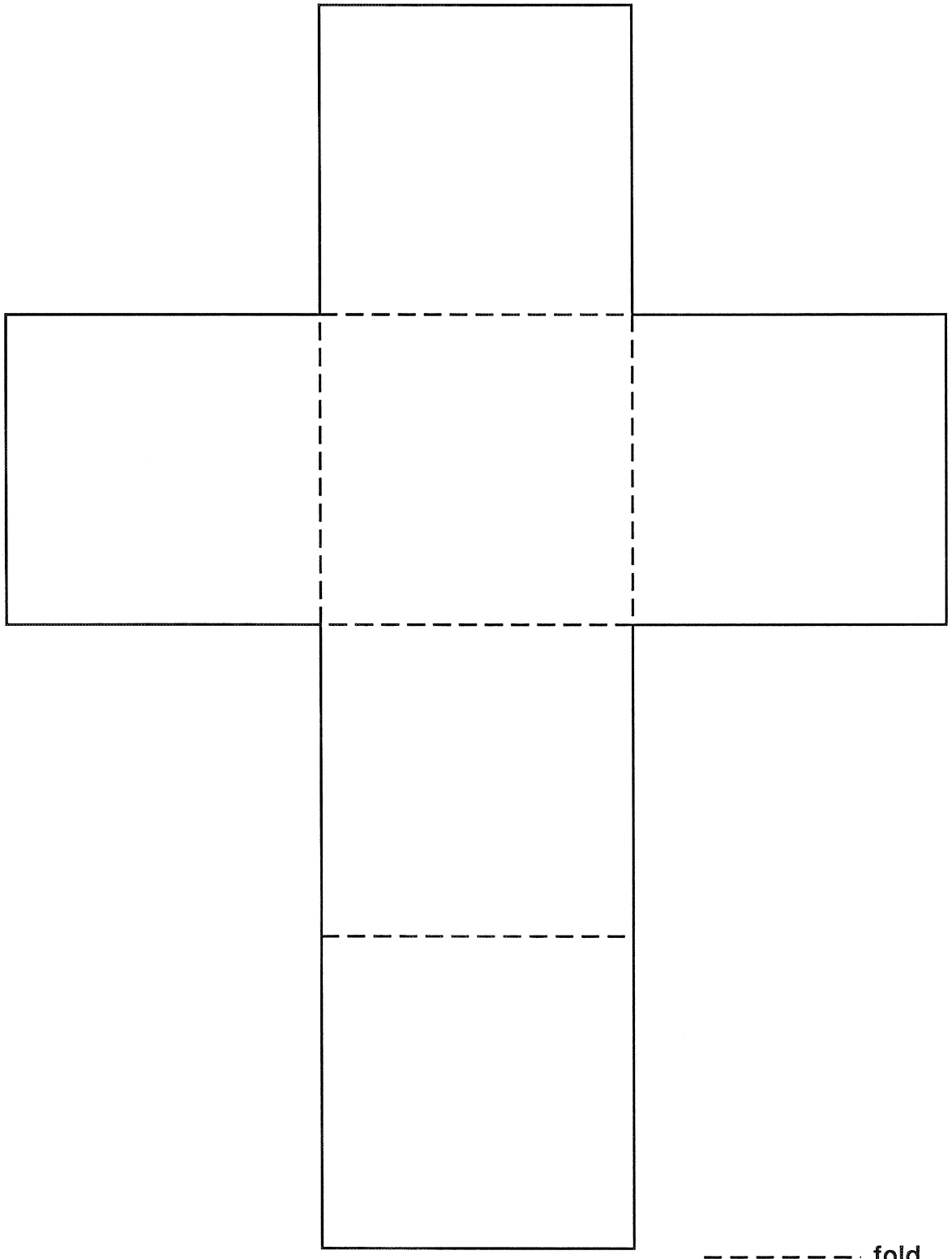
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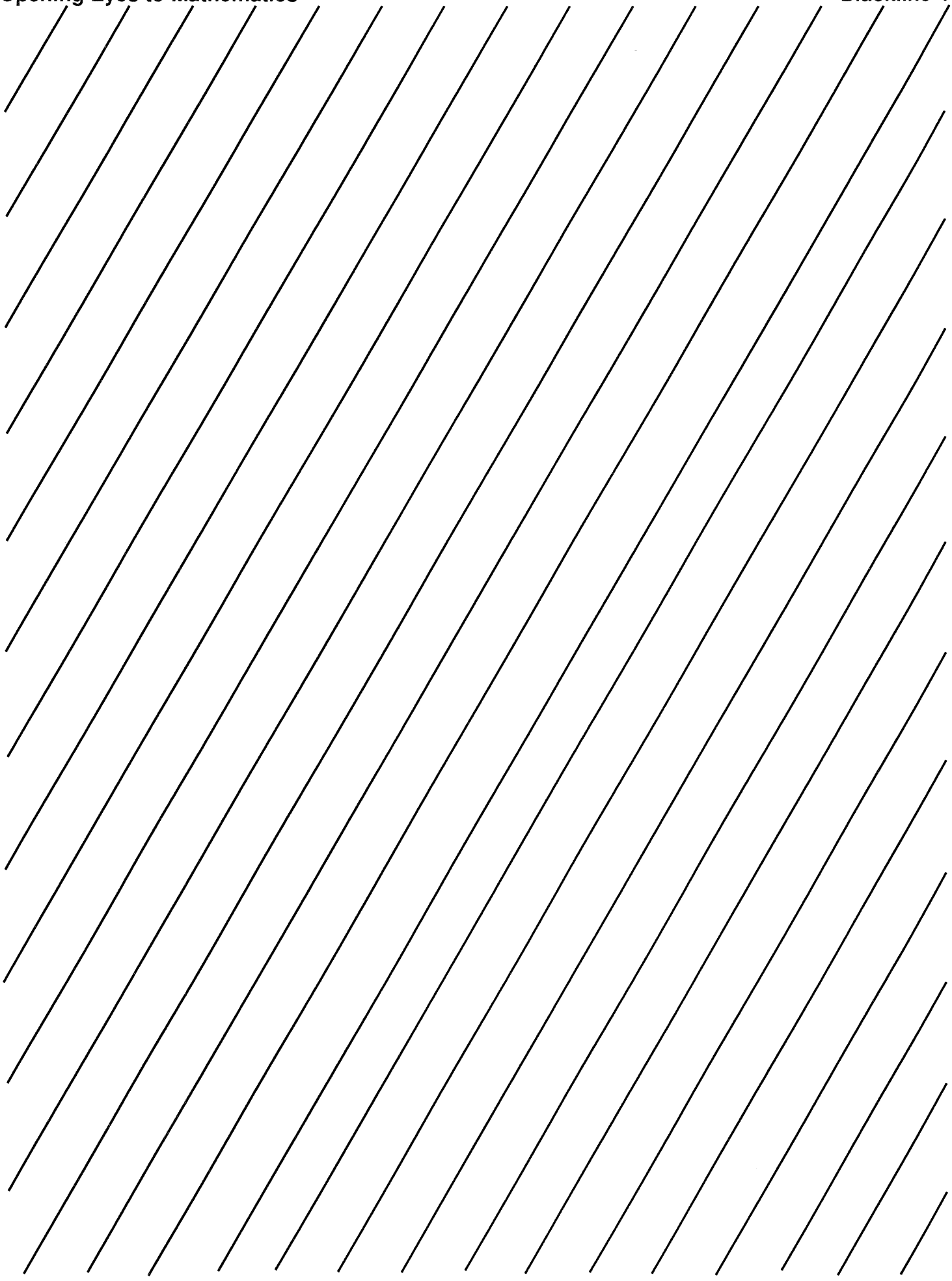
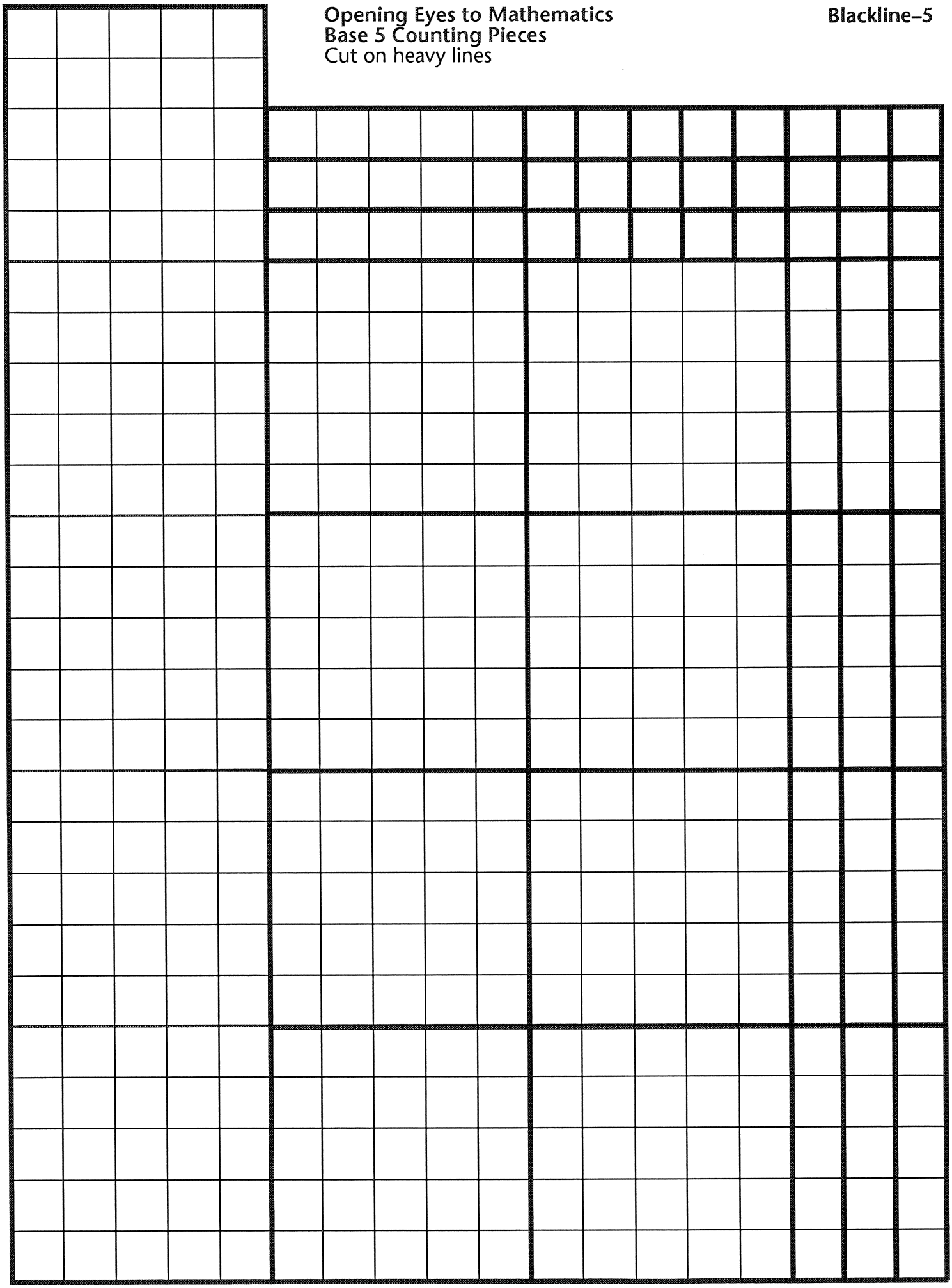
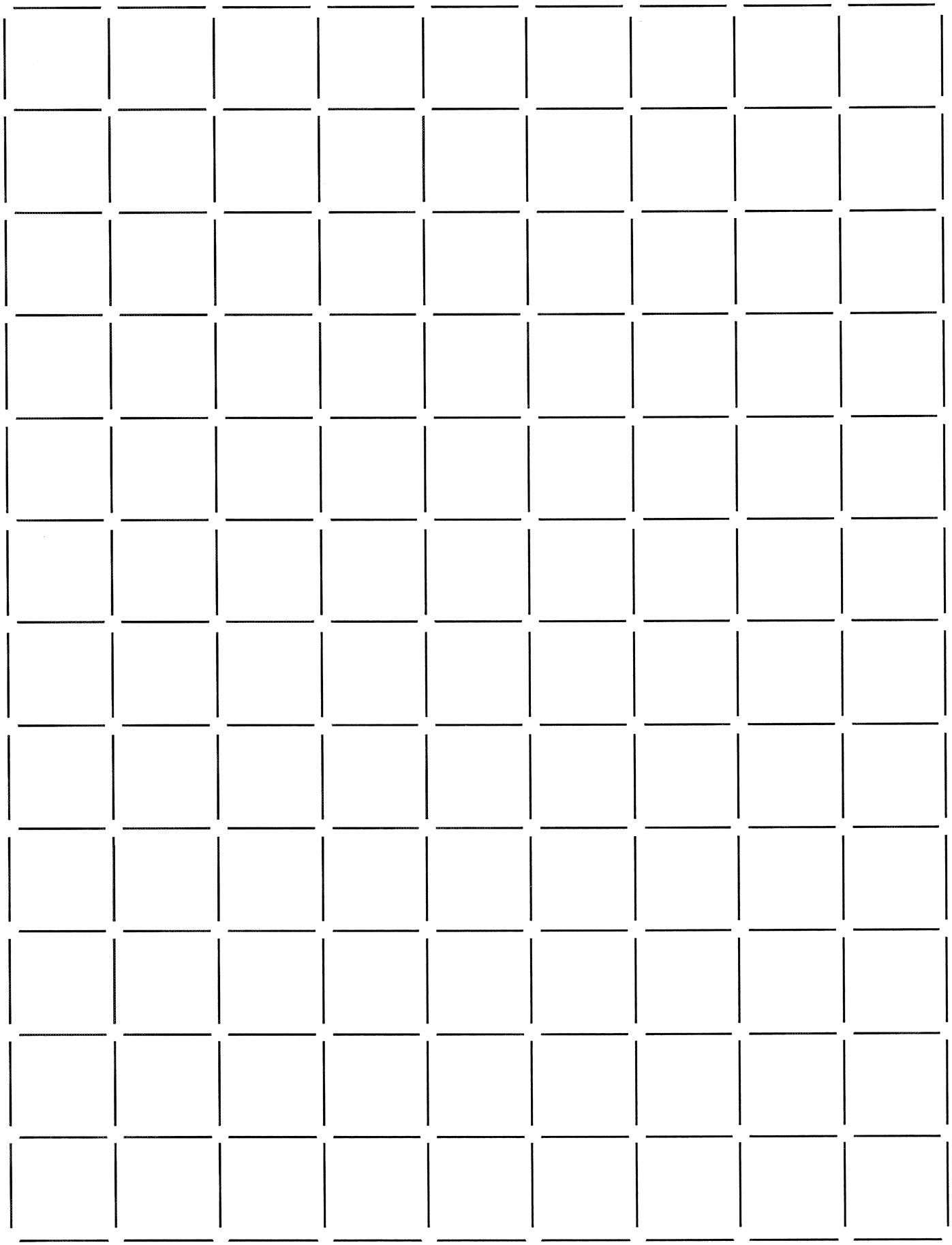
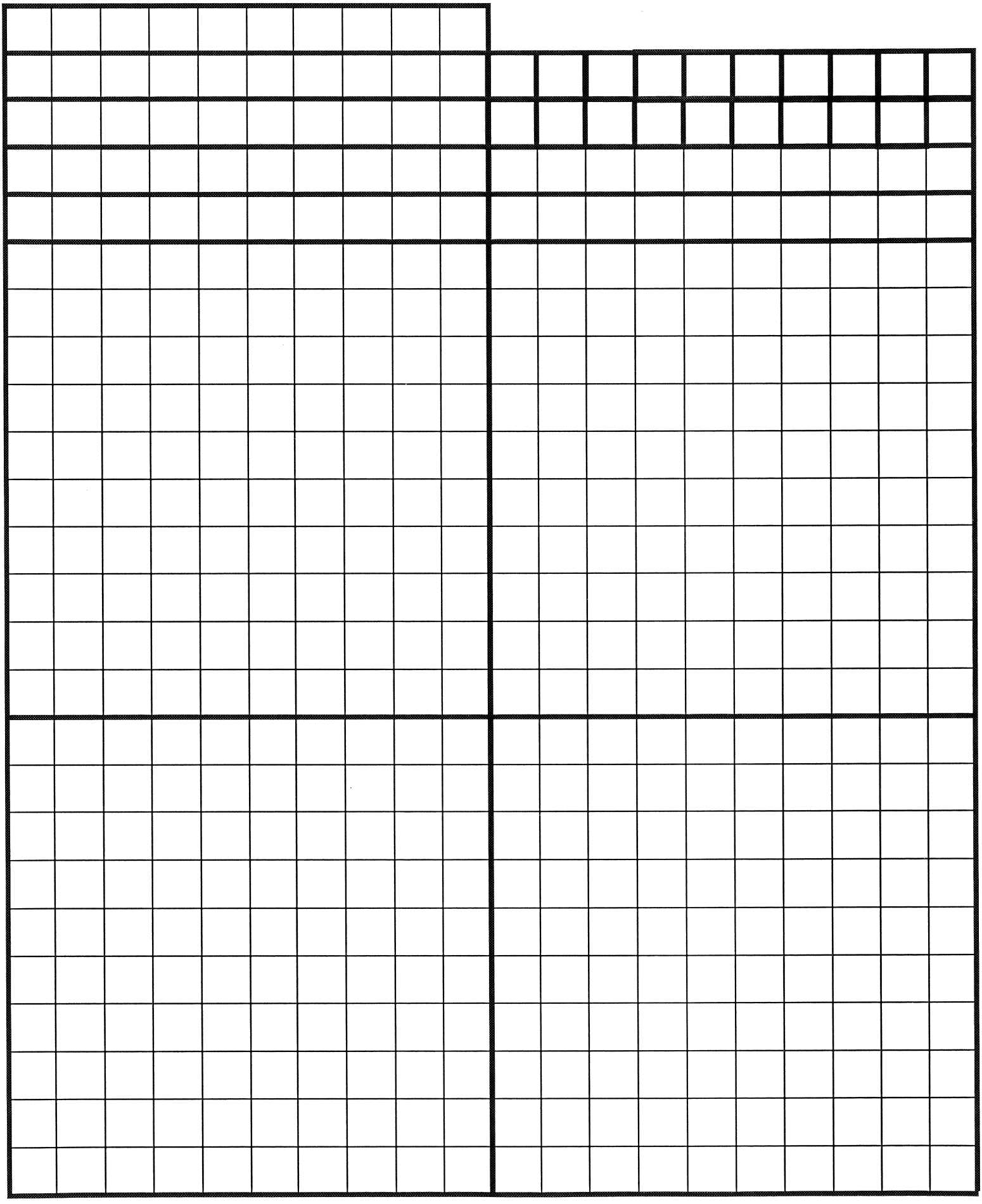


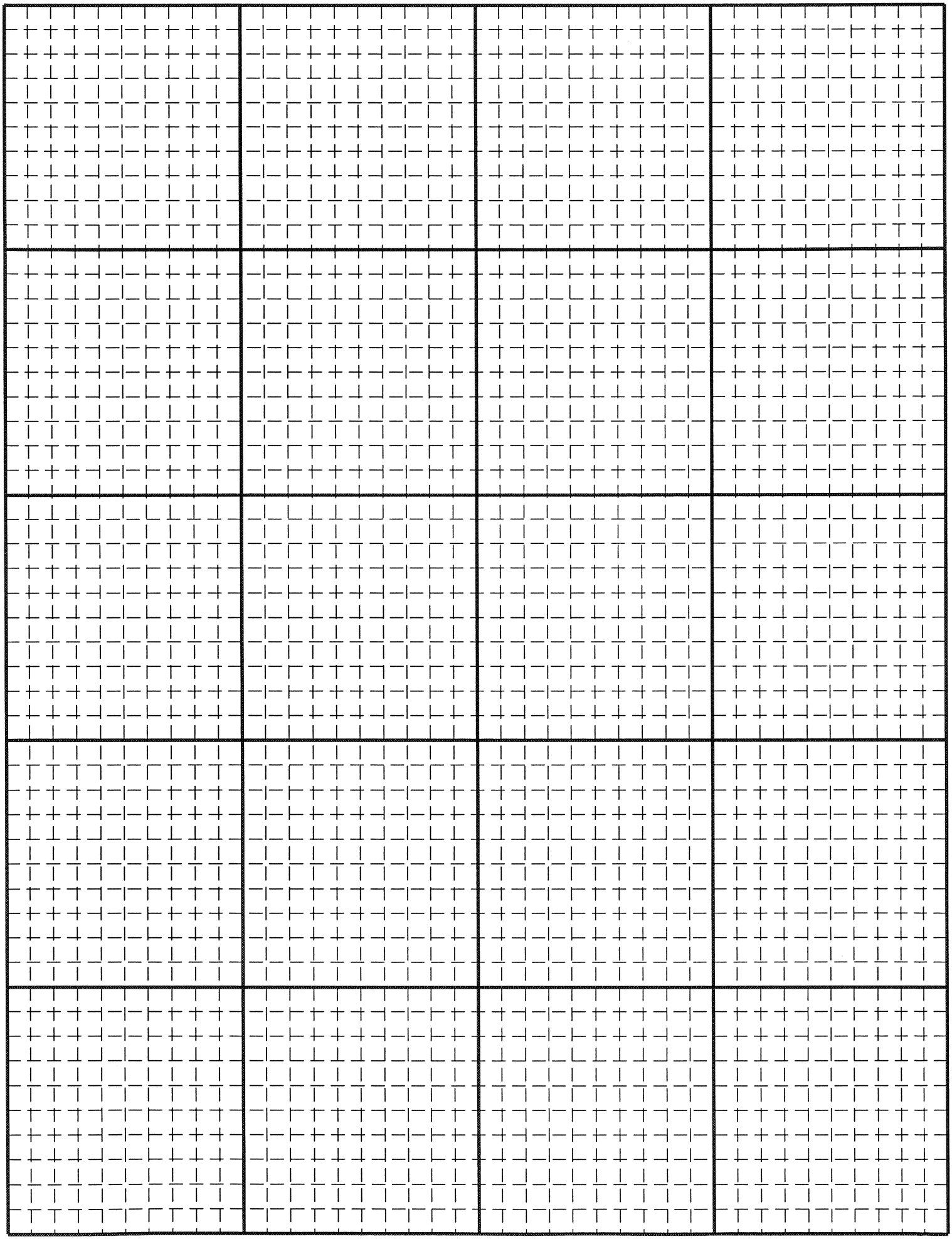
Opening Eyes to Mathematics
Base 5 Counting Pieces
Cut on heavy lines

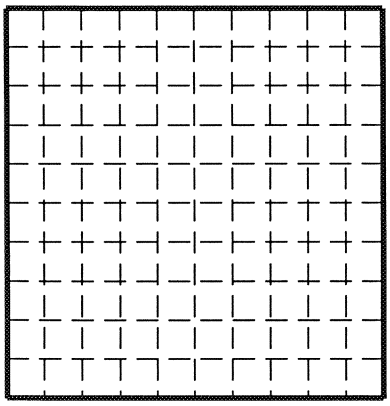
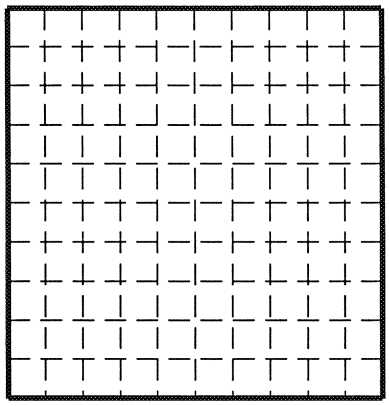
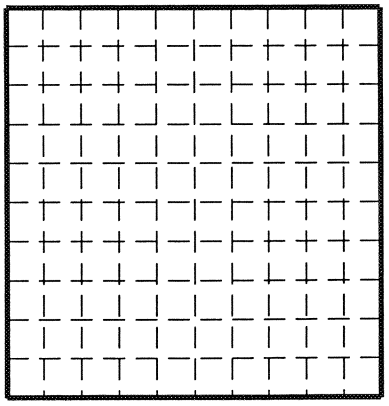
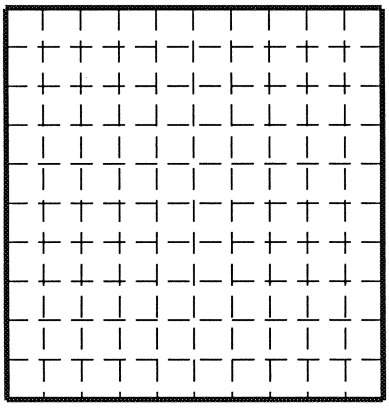
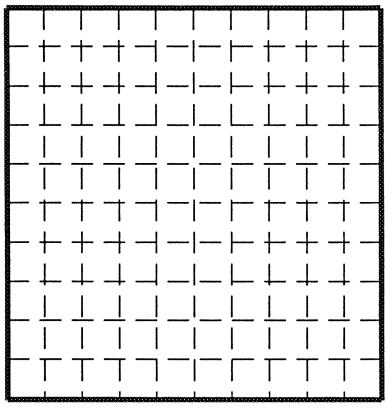
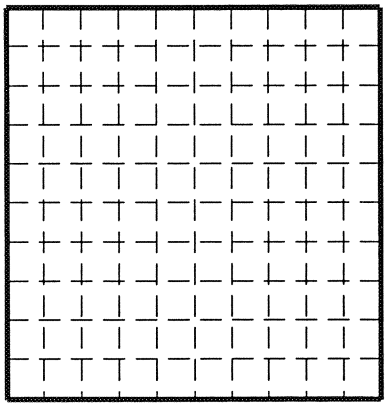
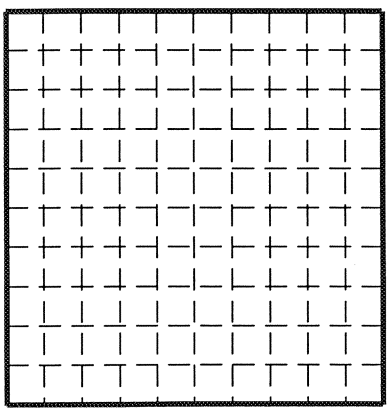
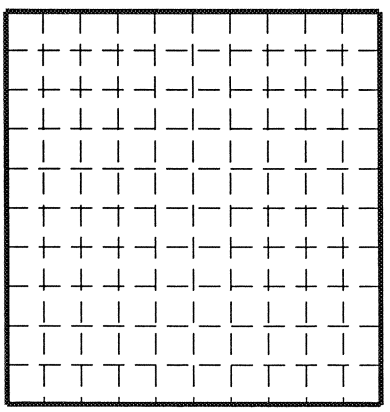
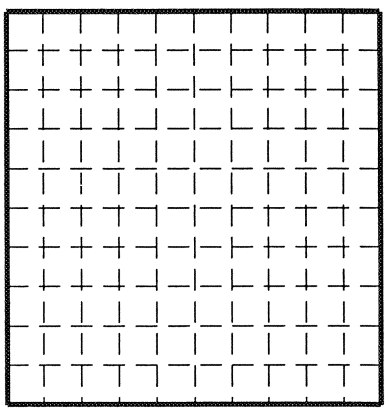


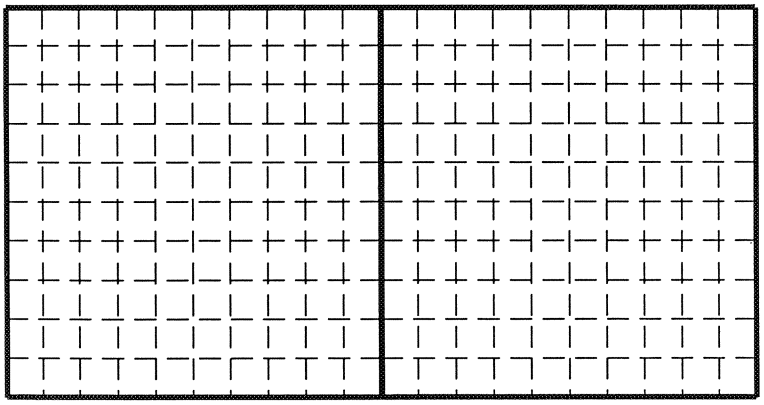
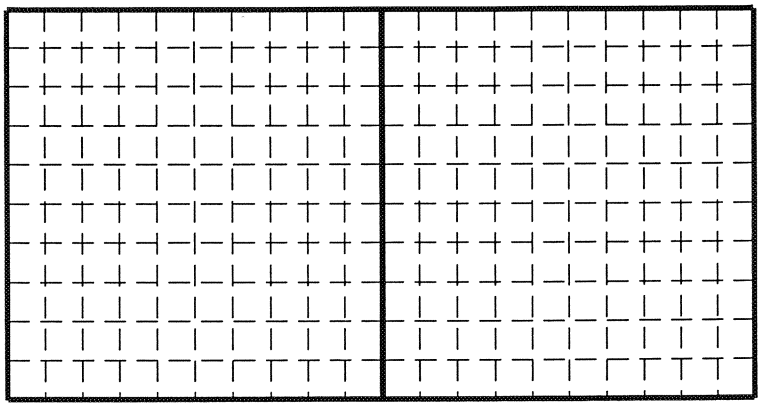
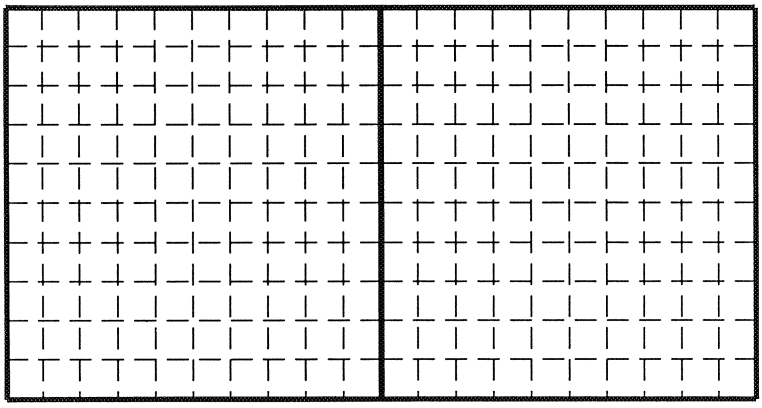
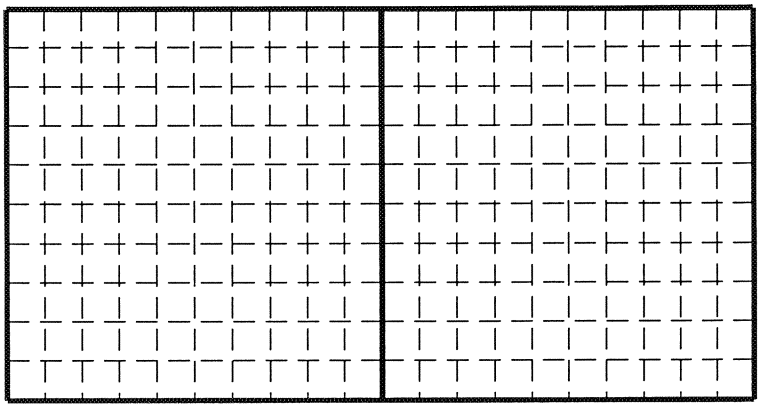
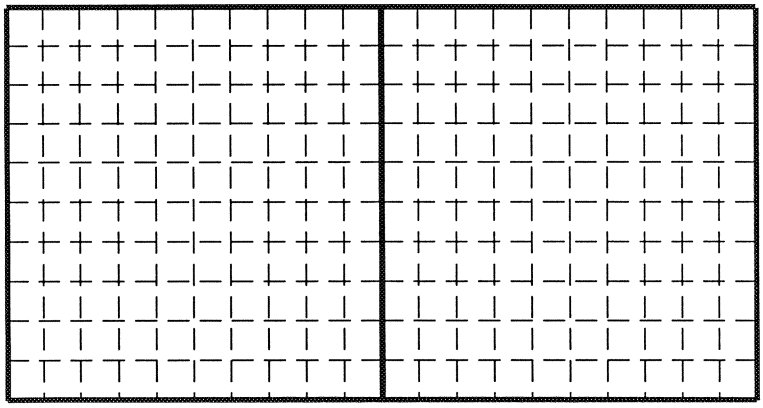
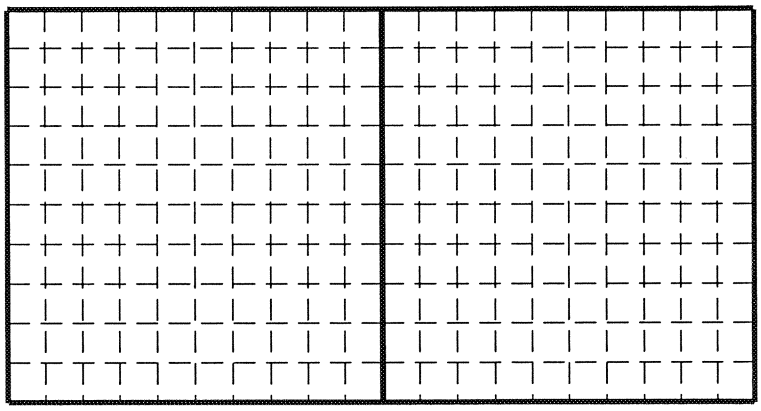
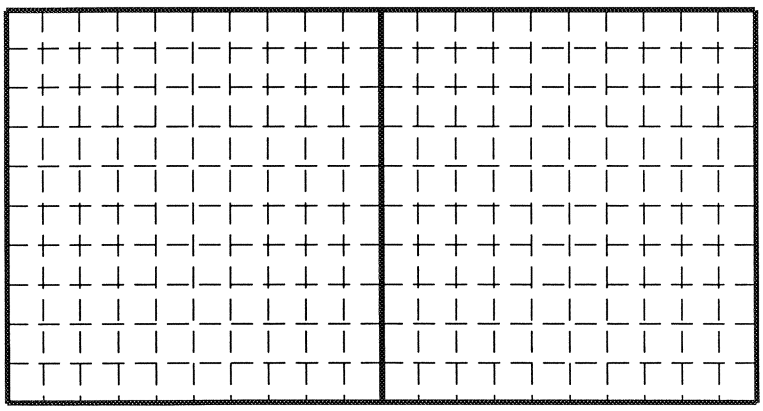
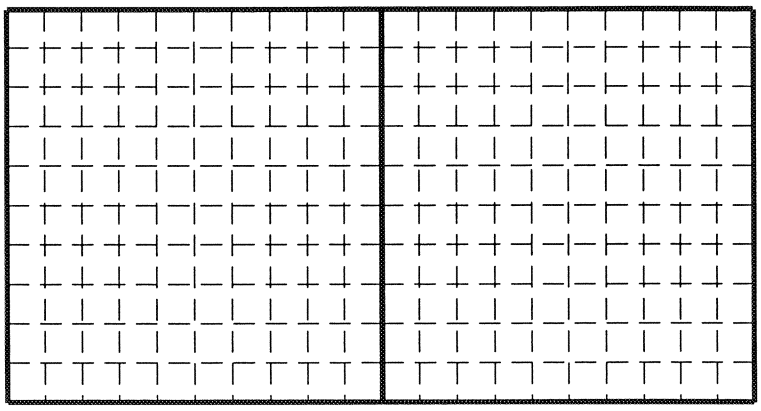


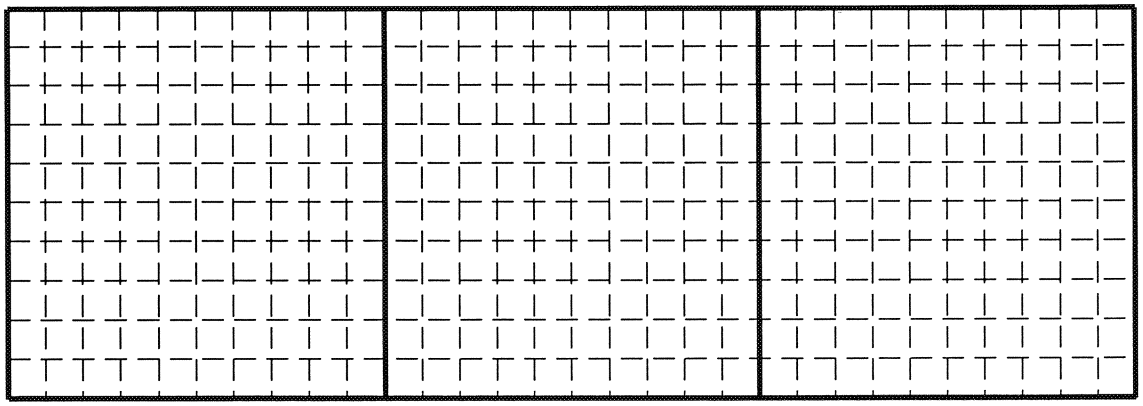
Base 10 Counting Pieces
Cut on heavy lines

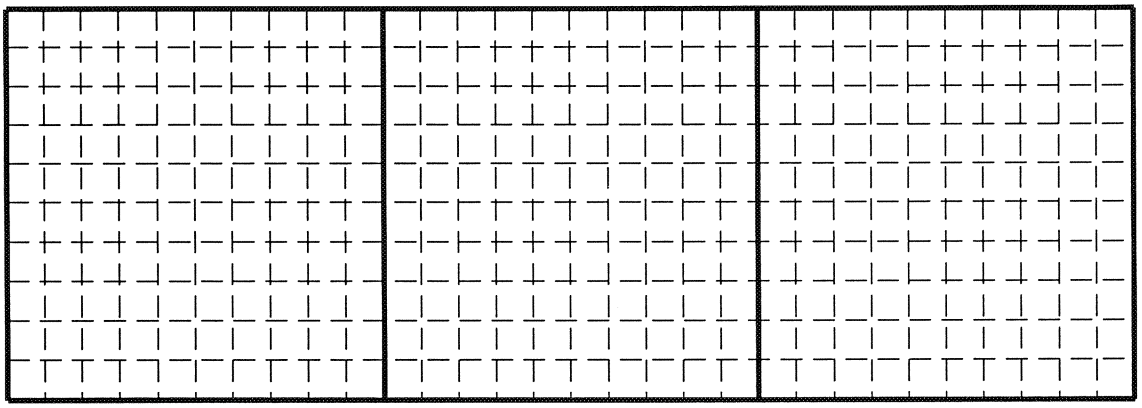


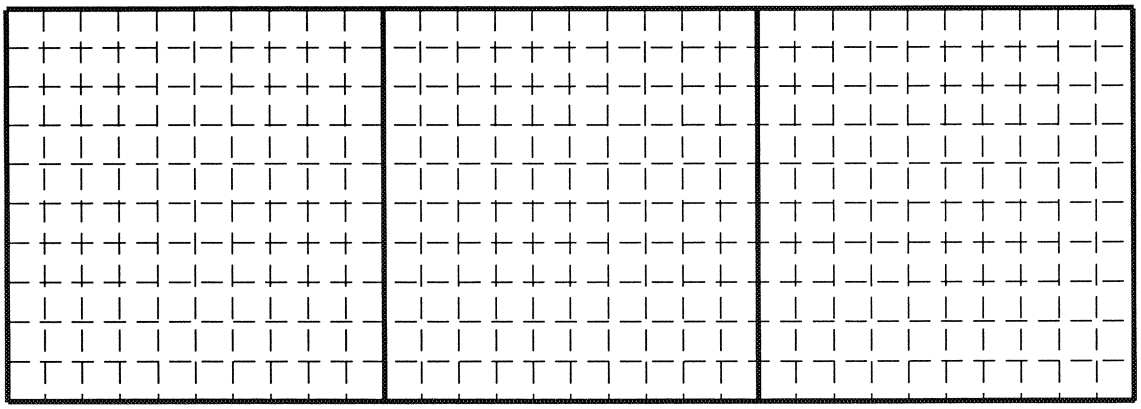


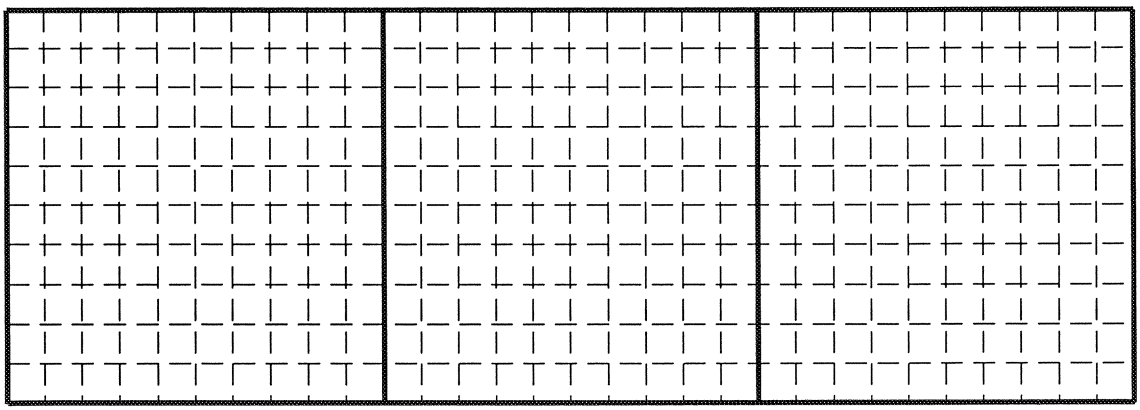










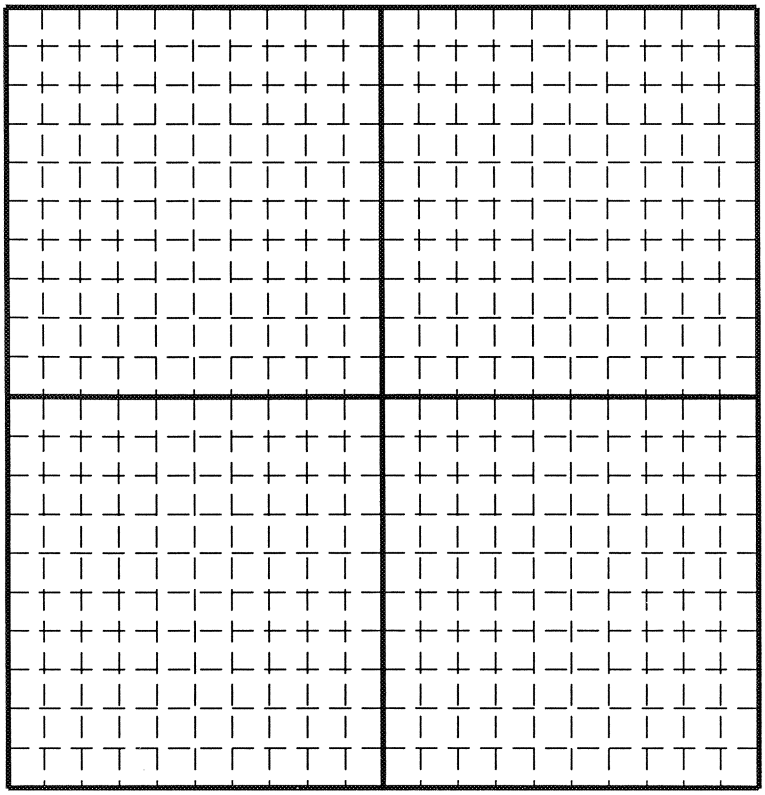









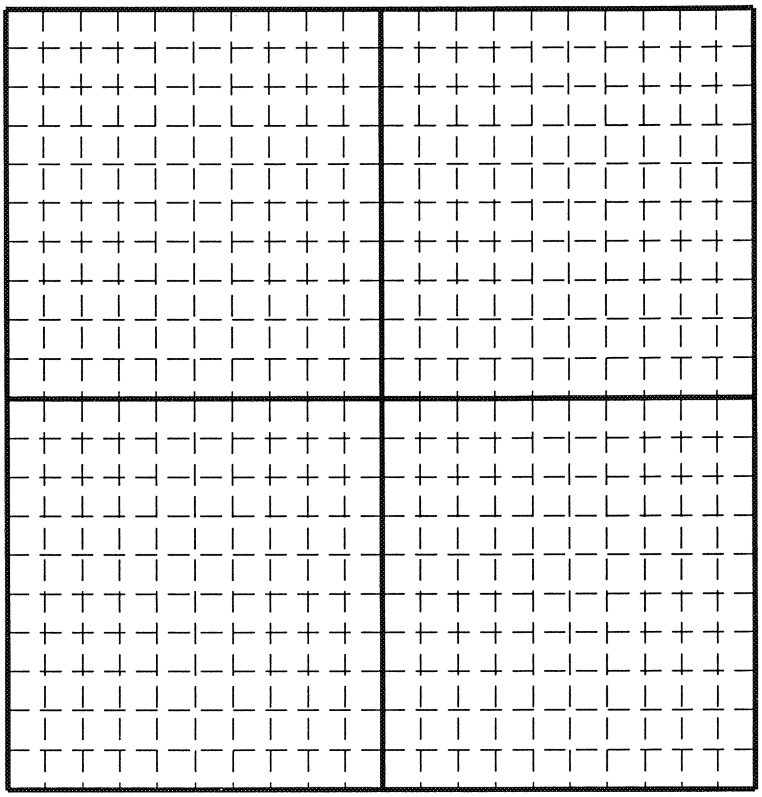


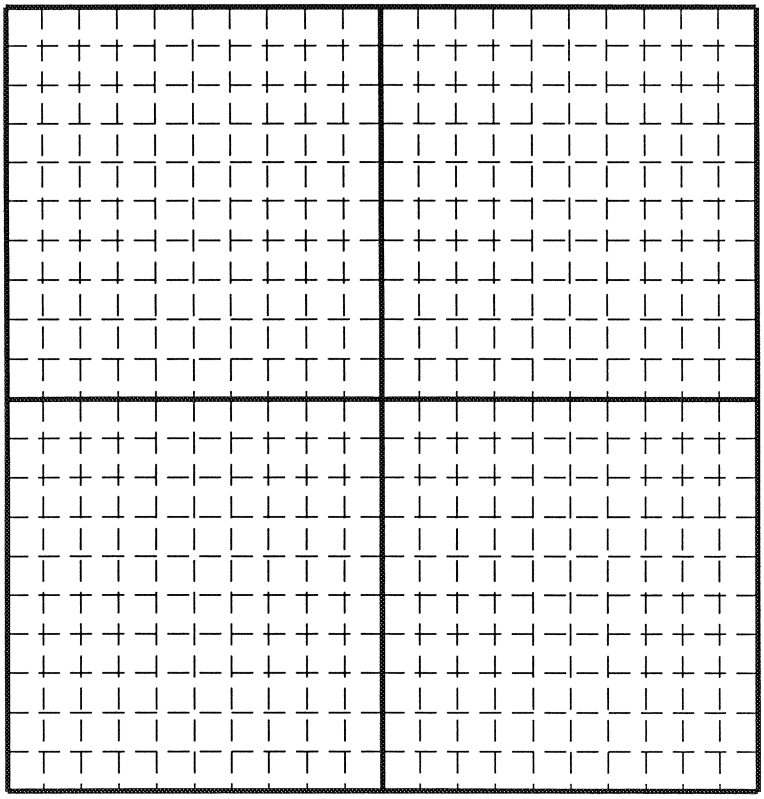


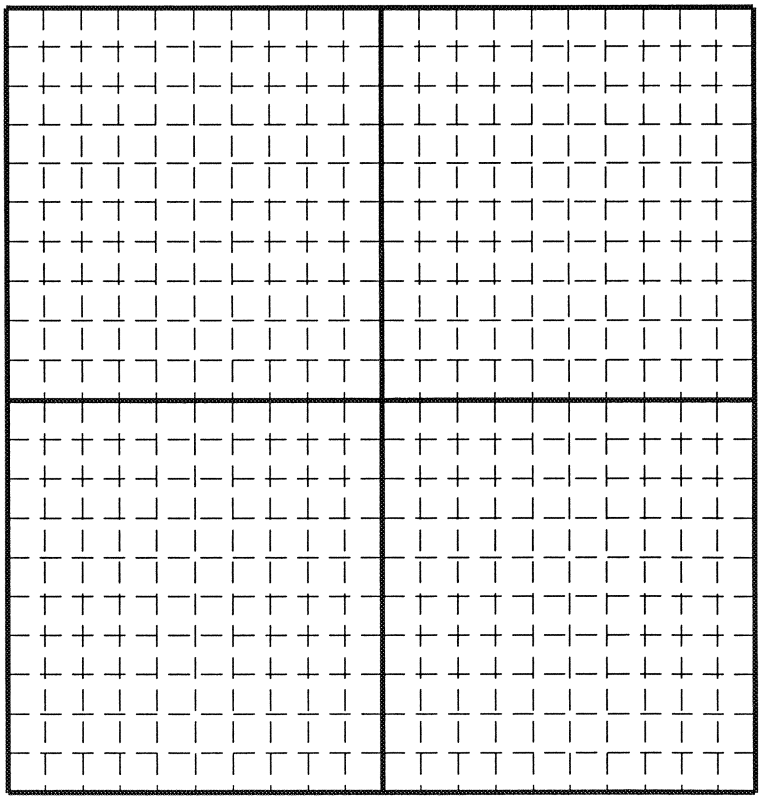


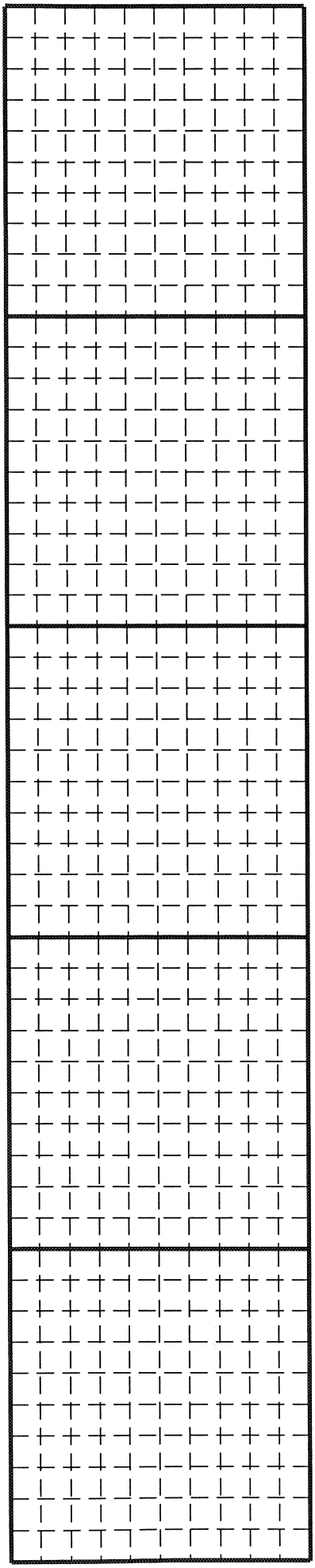


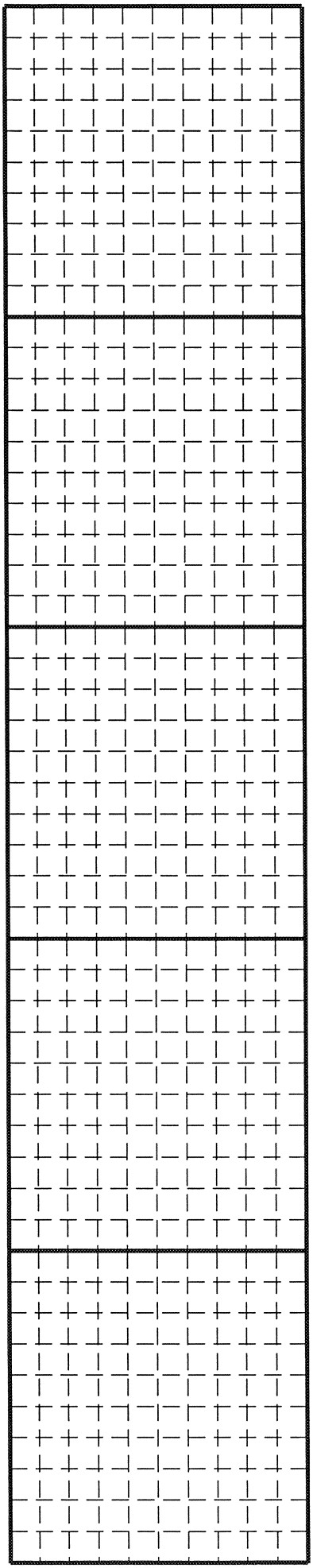


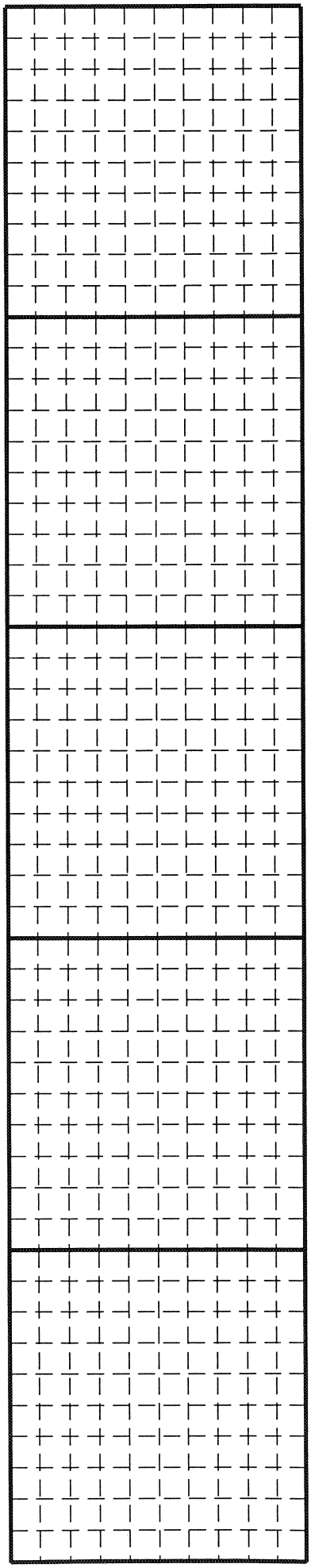


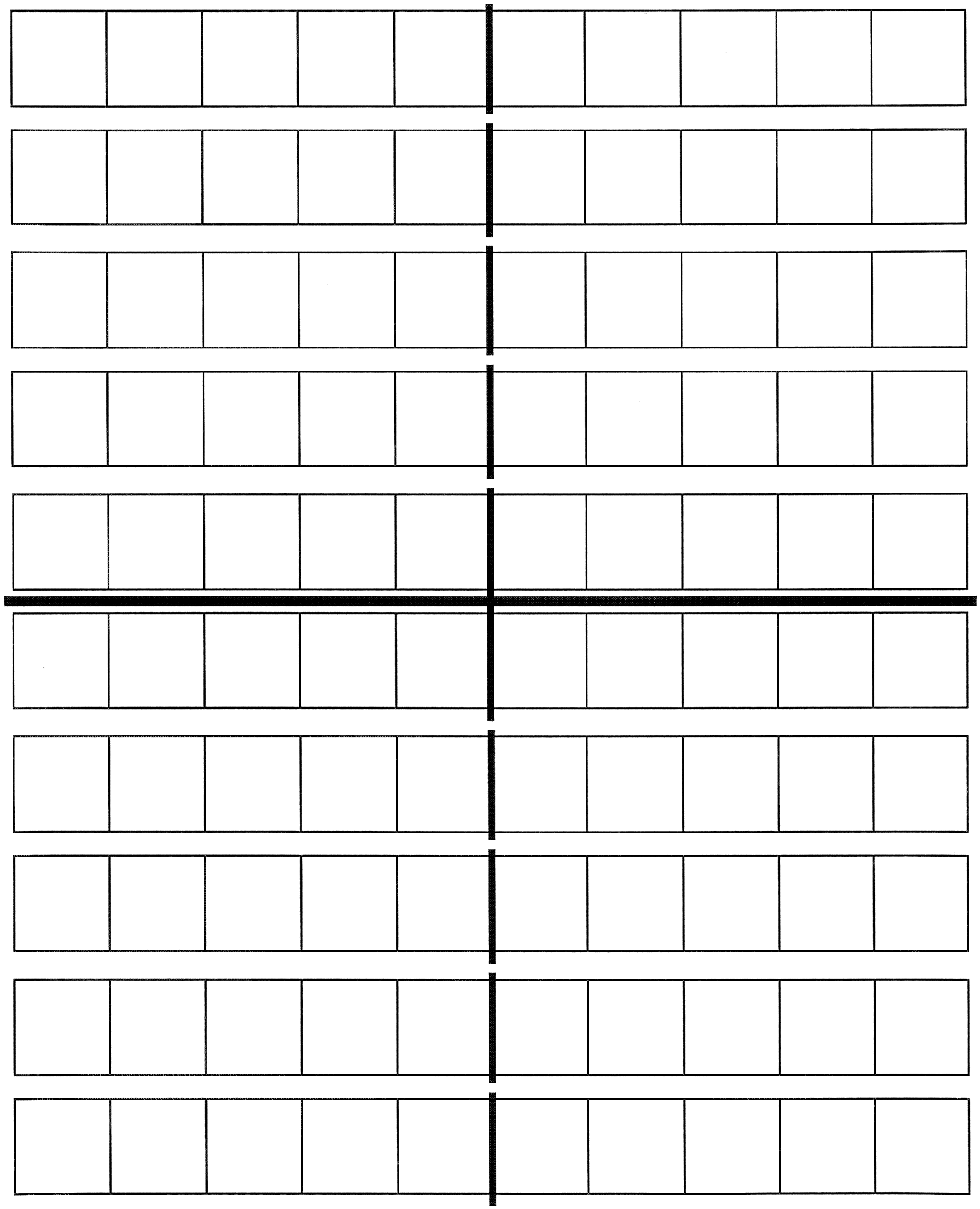


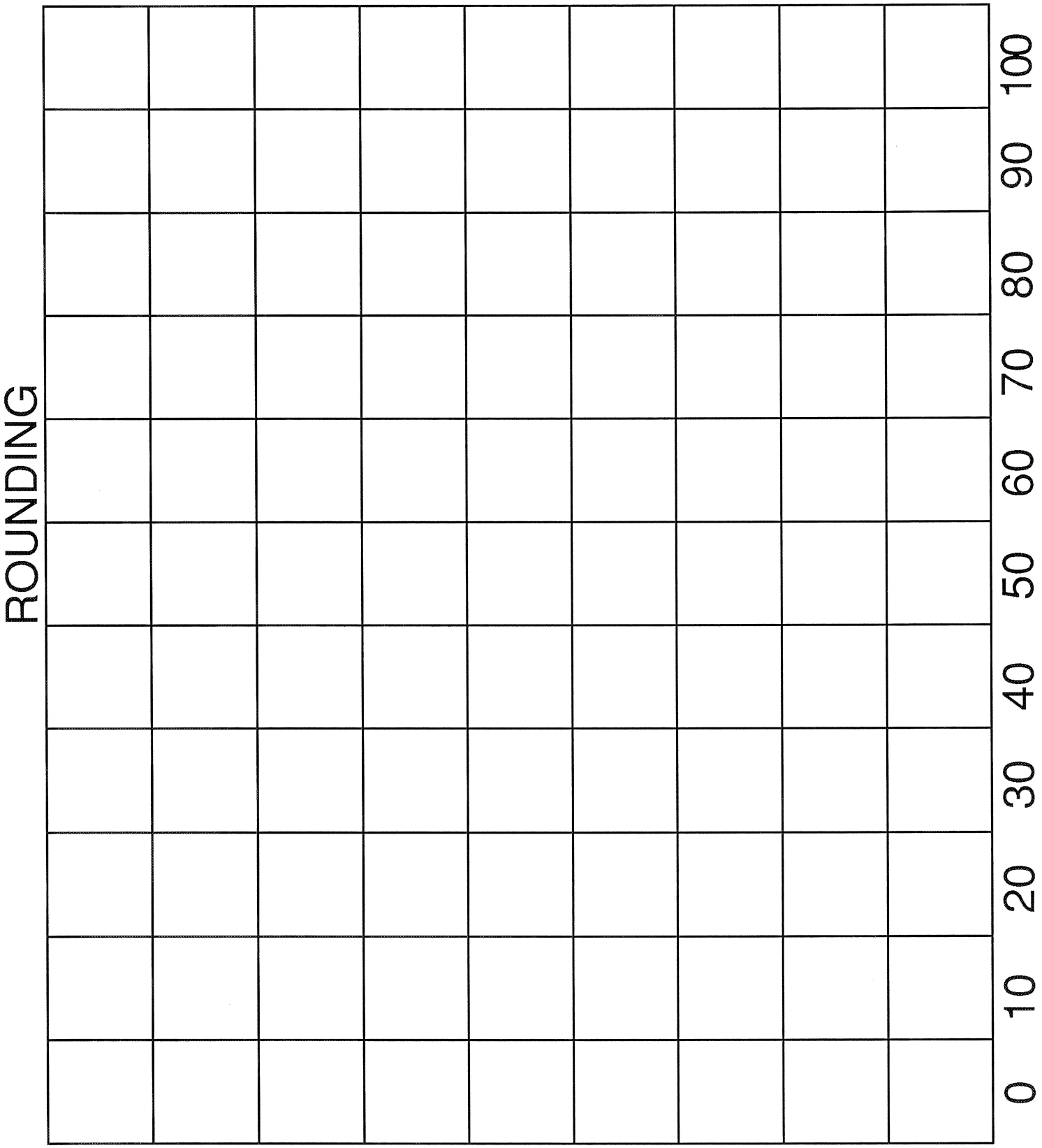








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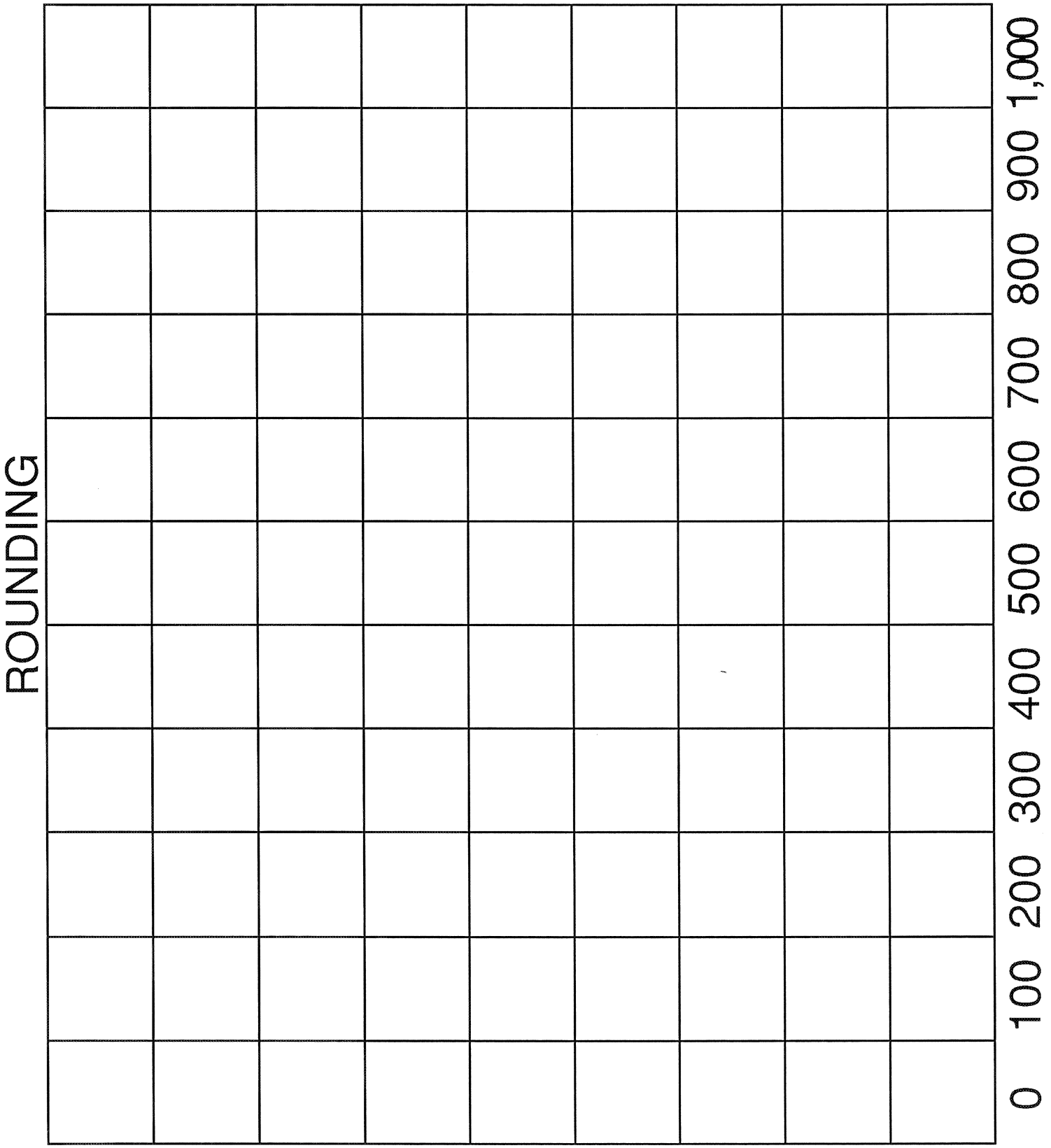
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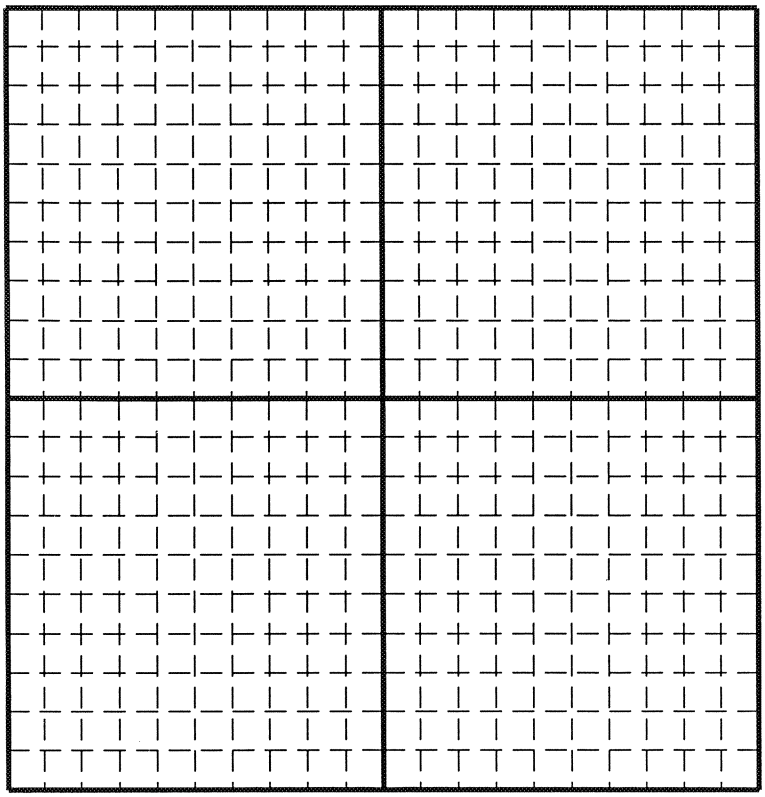
The Great Race



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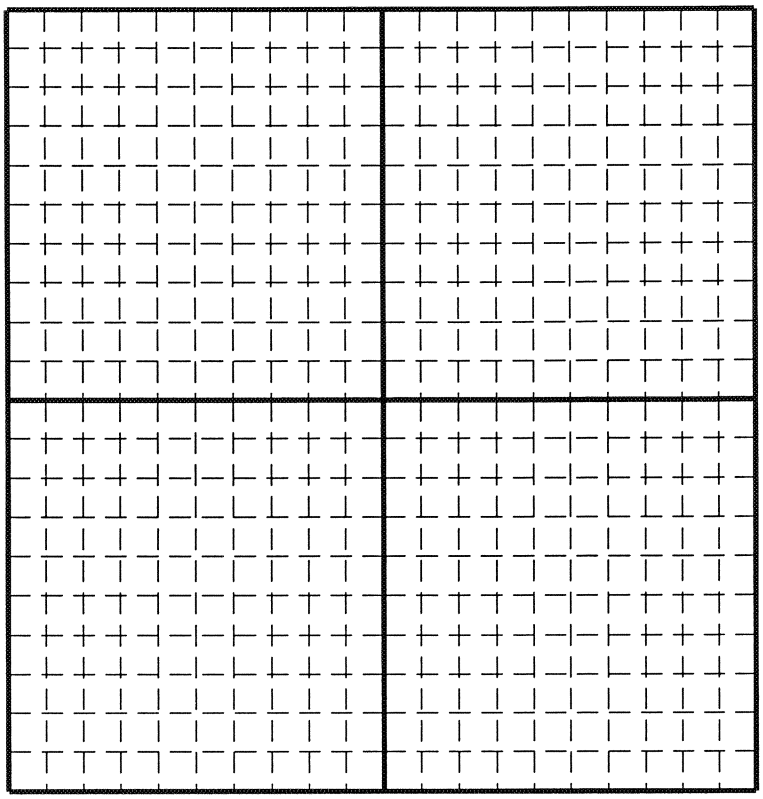

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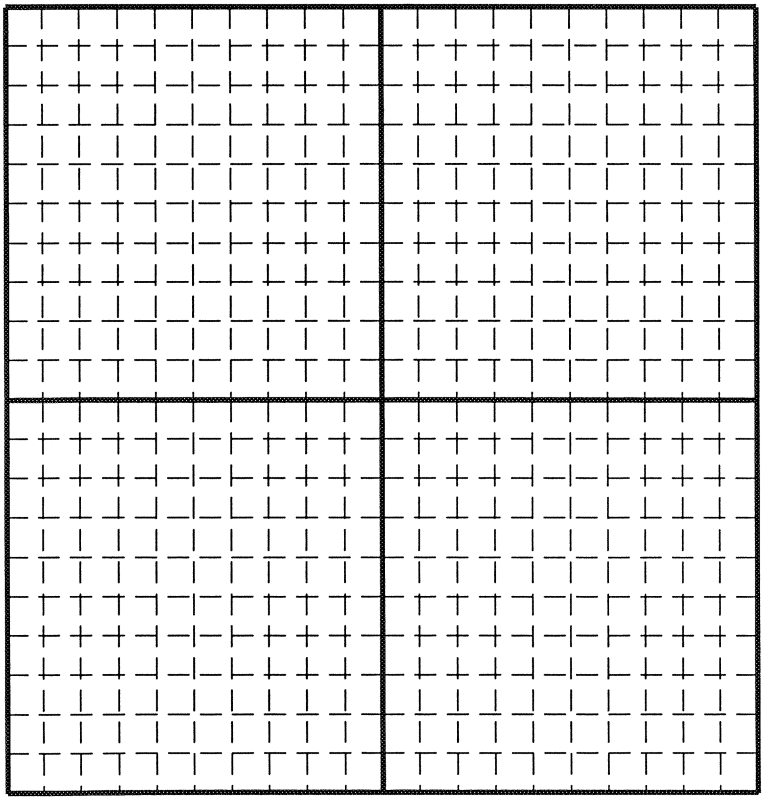

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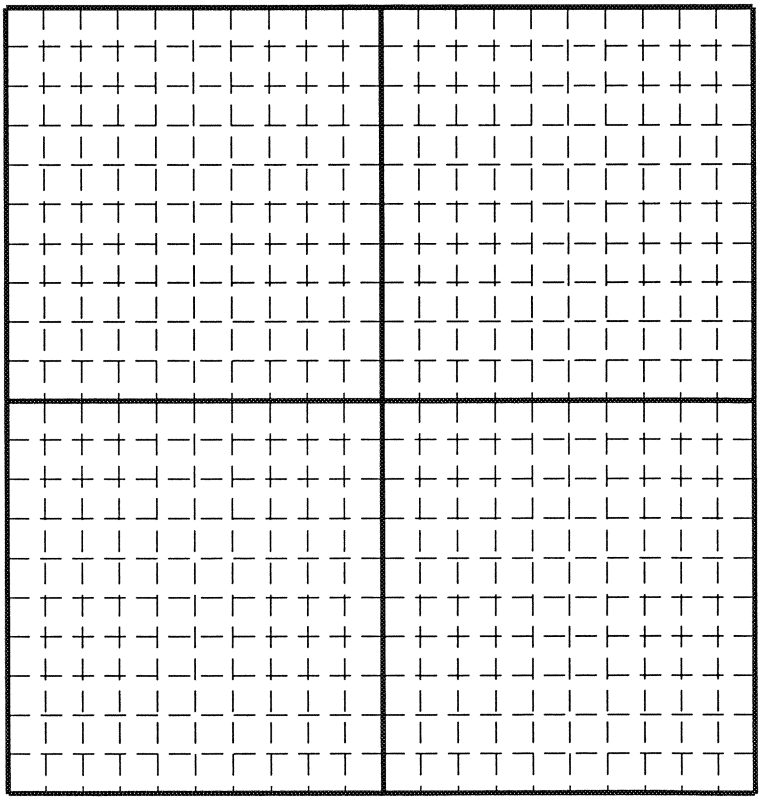

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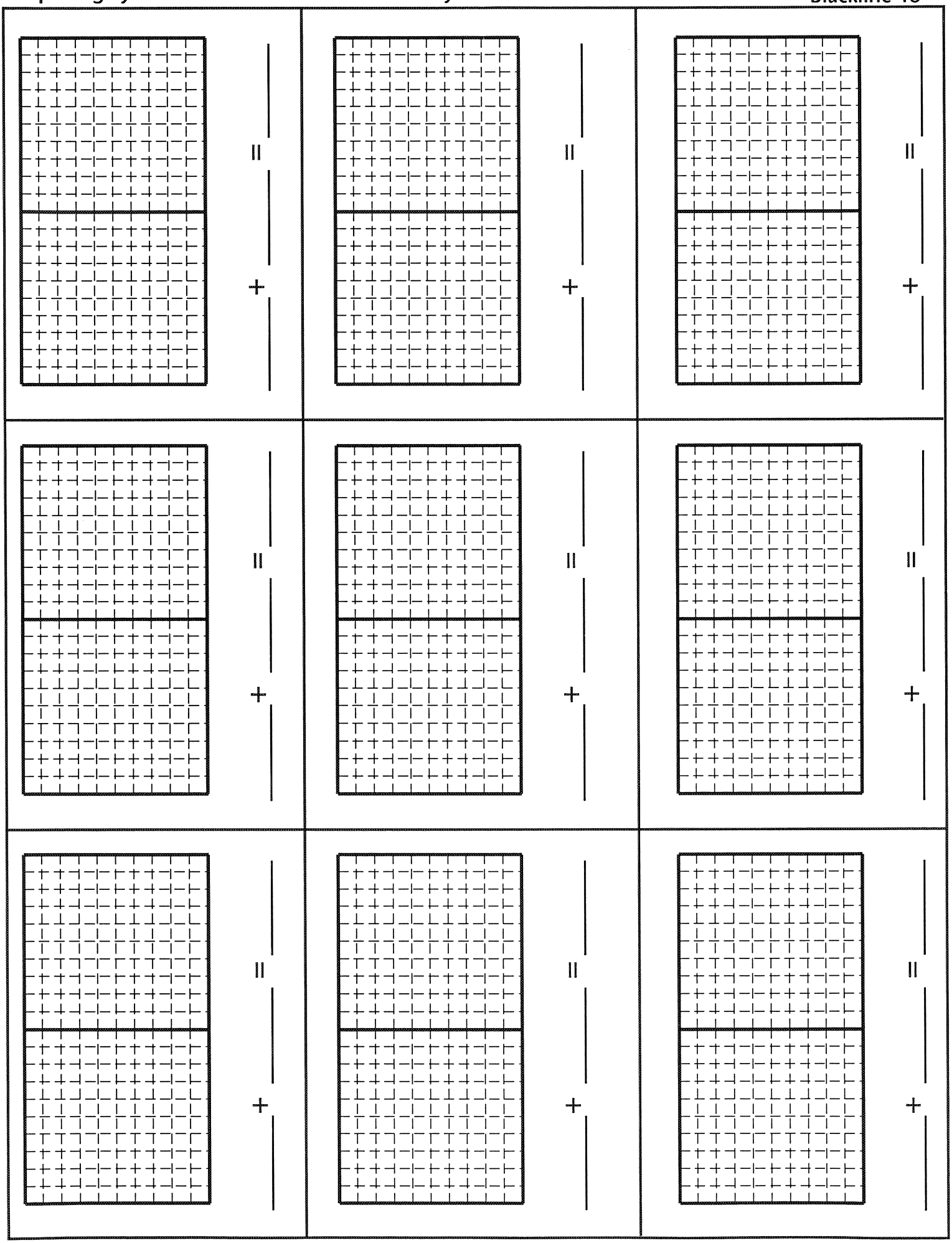

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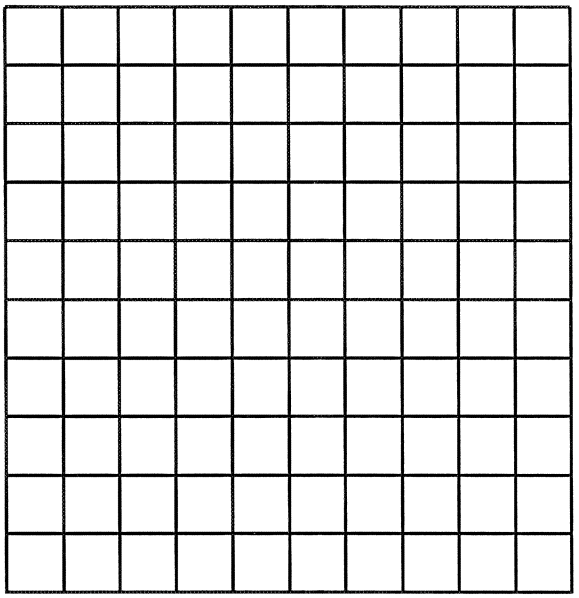

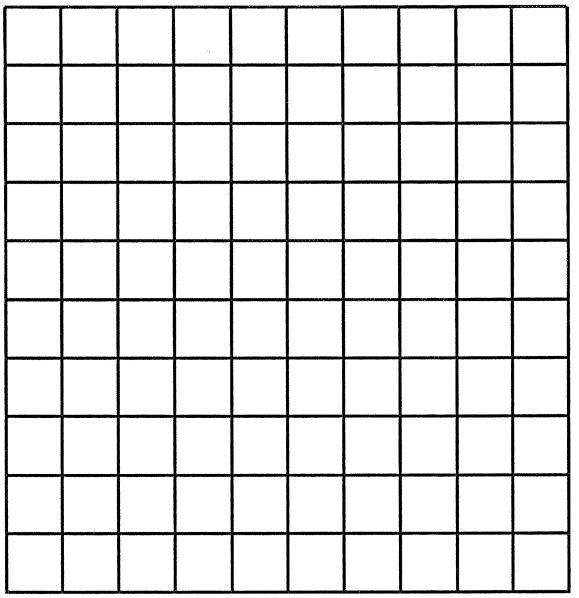

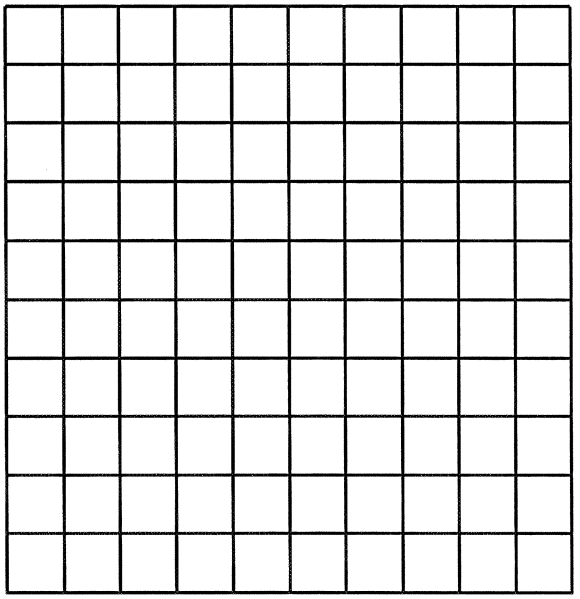

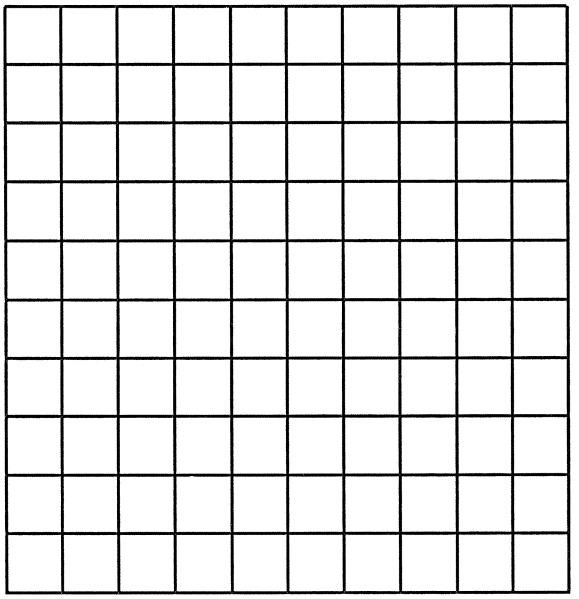

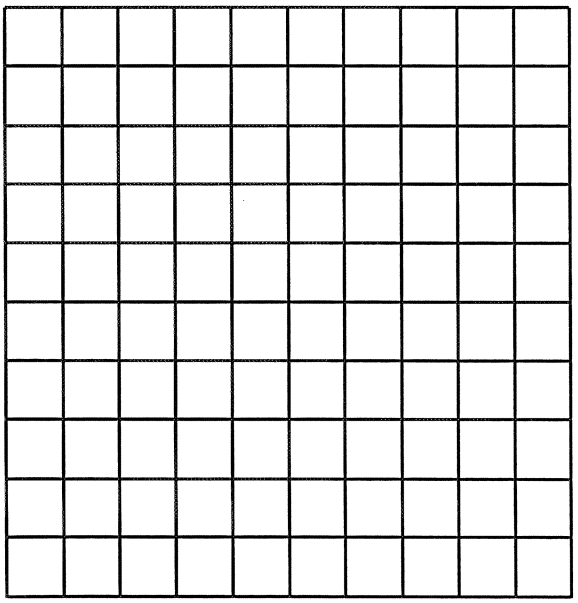

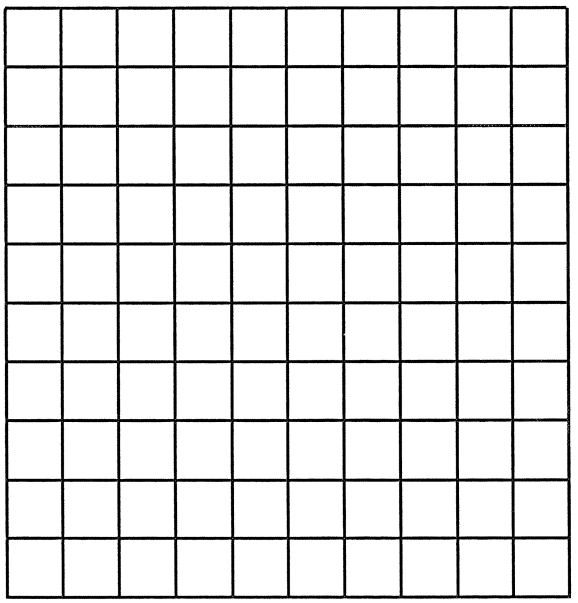

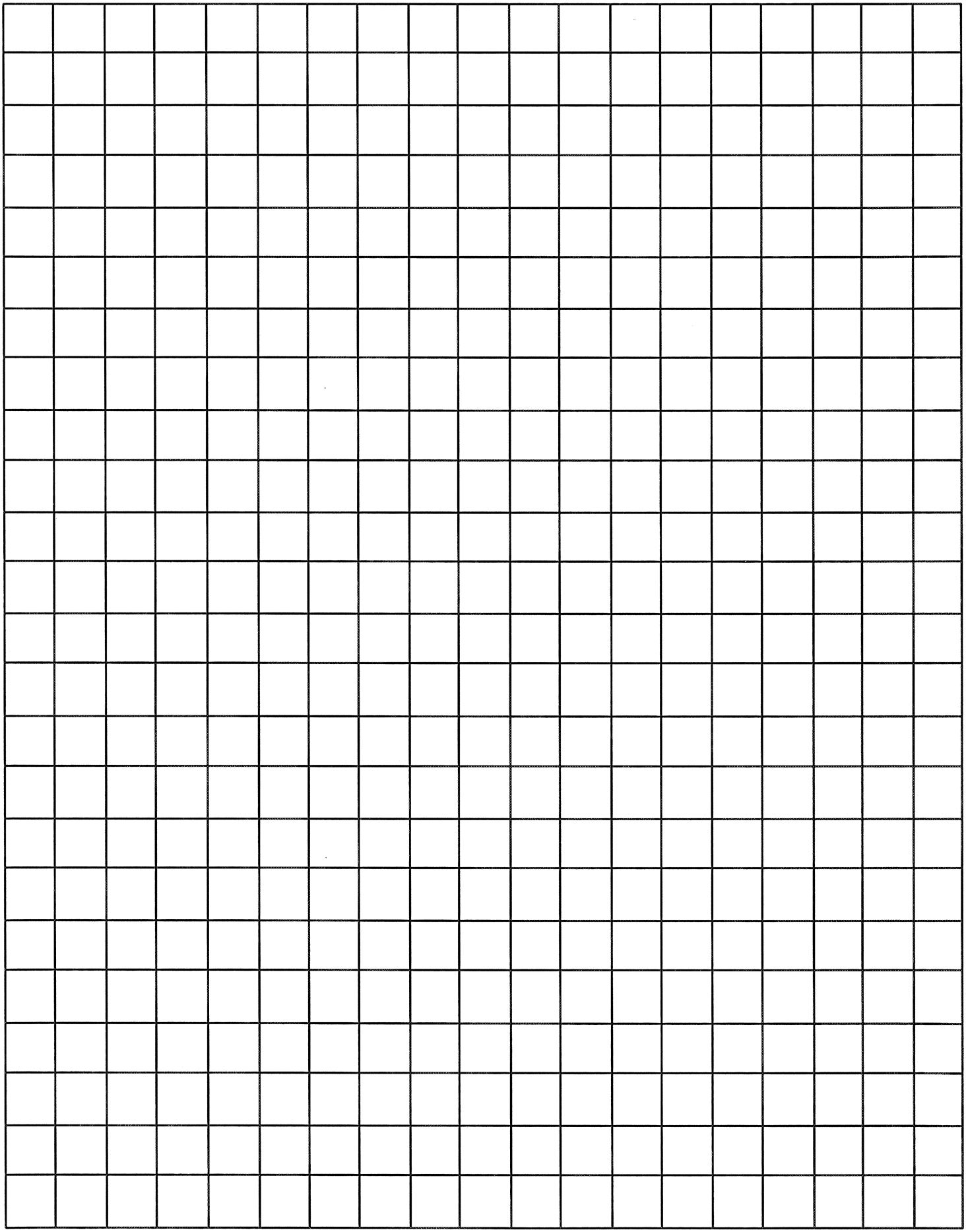

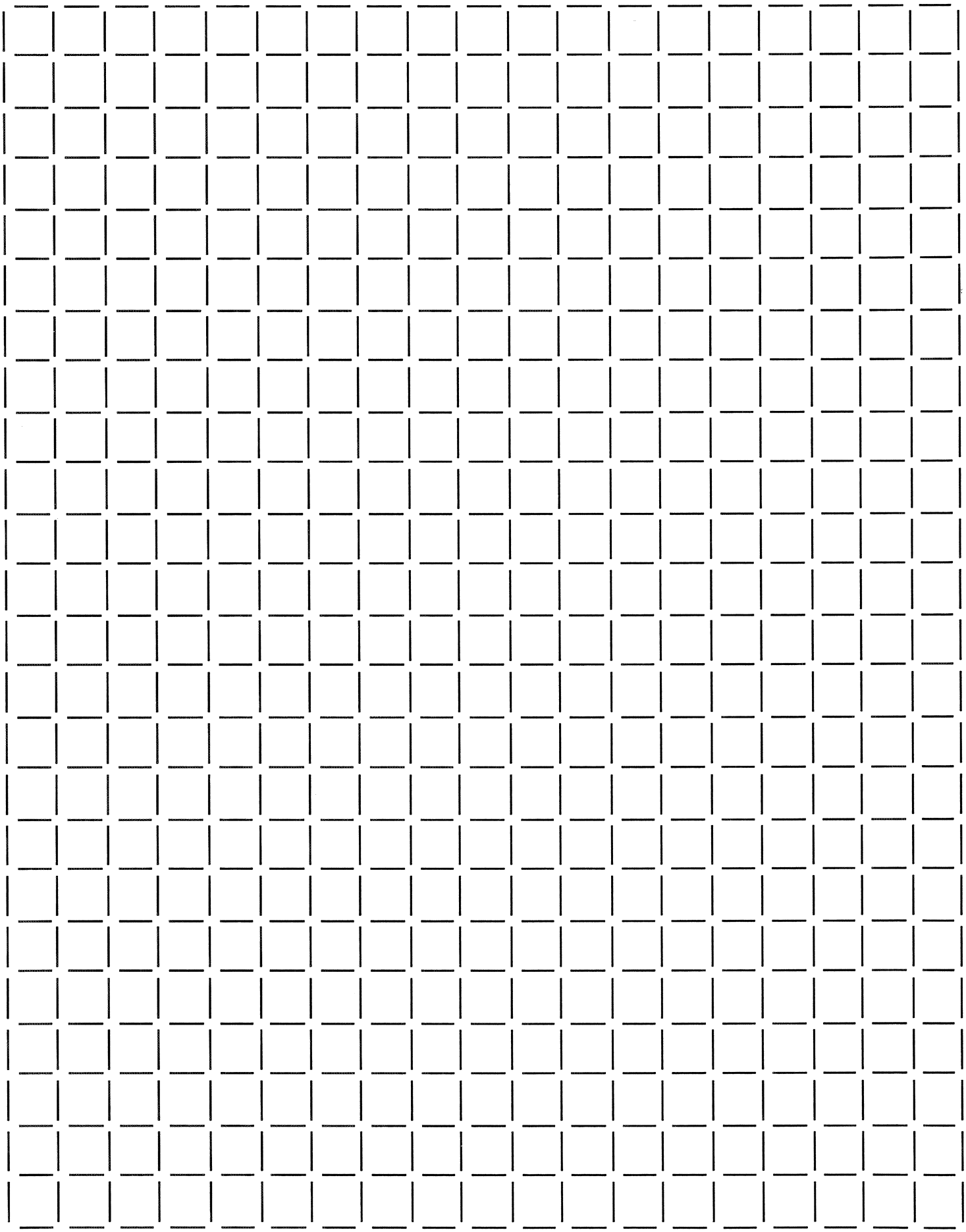

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1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
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41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
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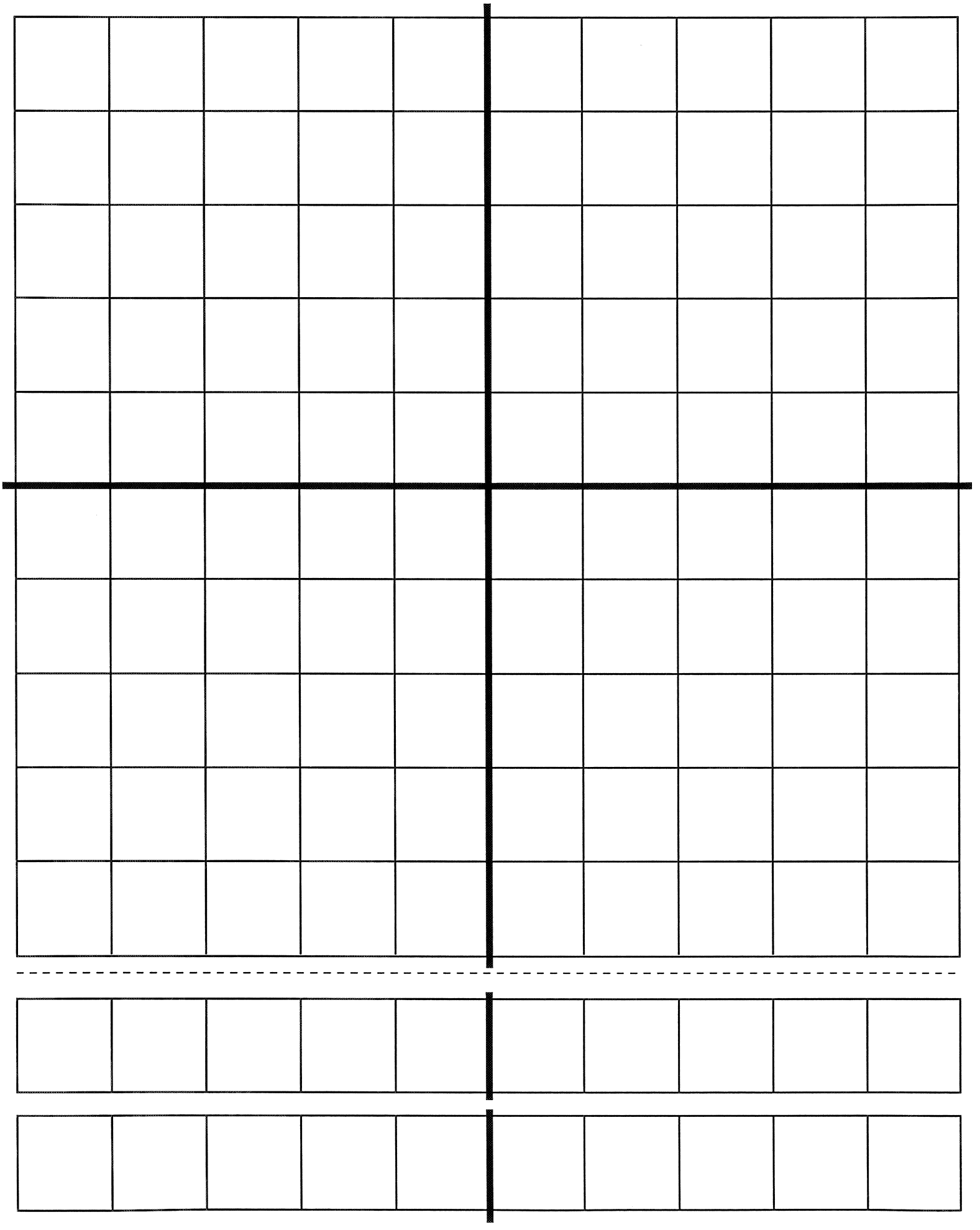
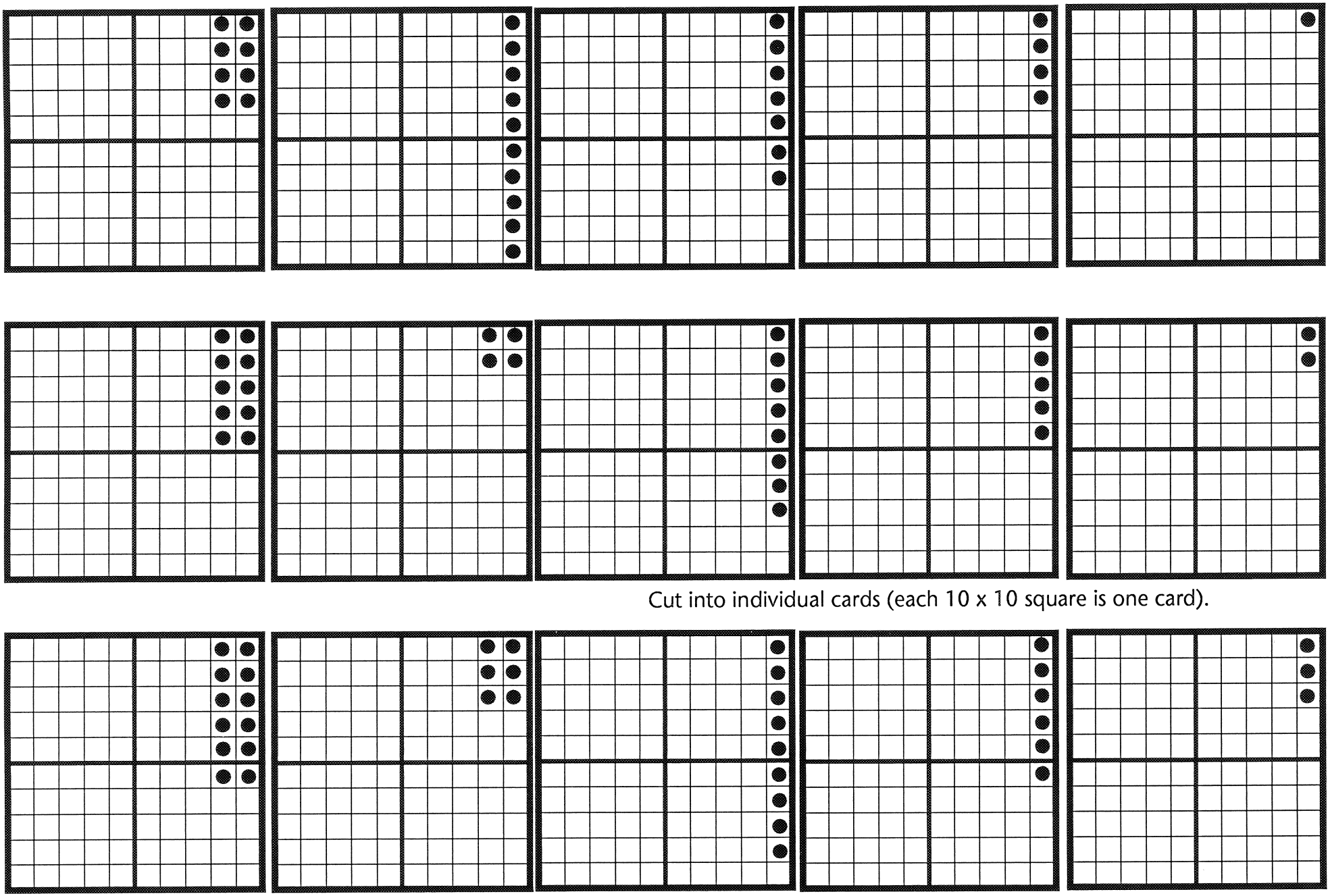
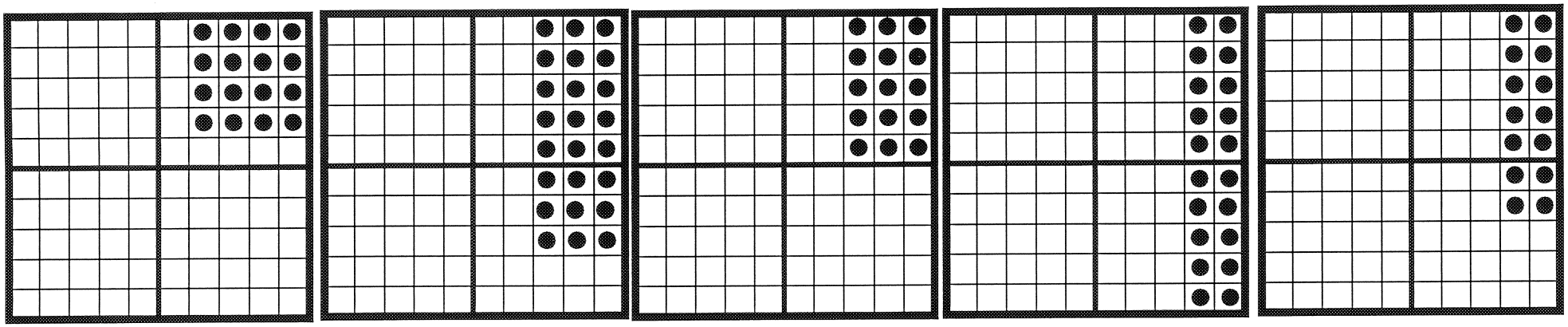
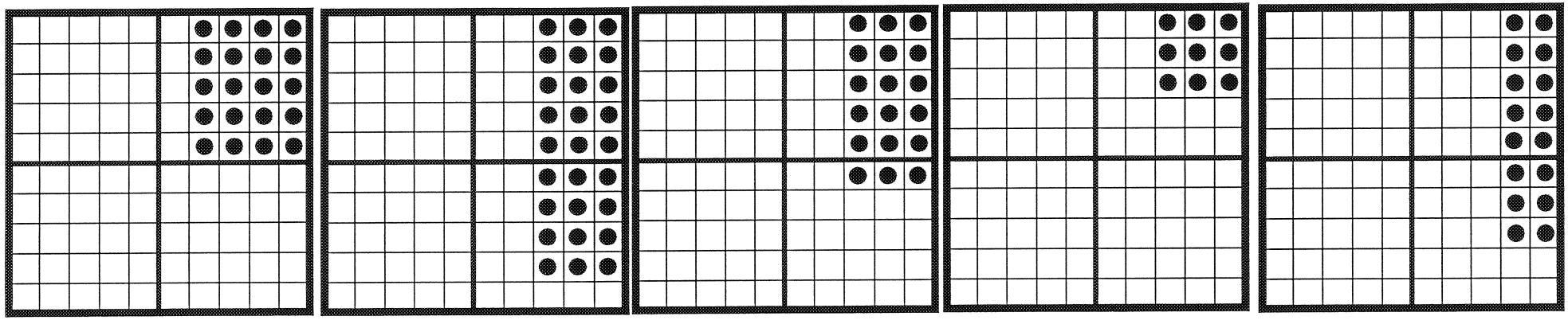
91	92	93	94	95	96	97	98	99	100



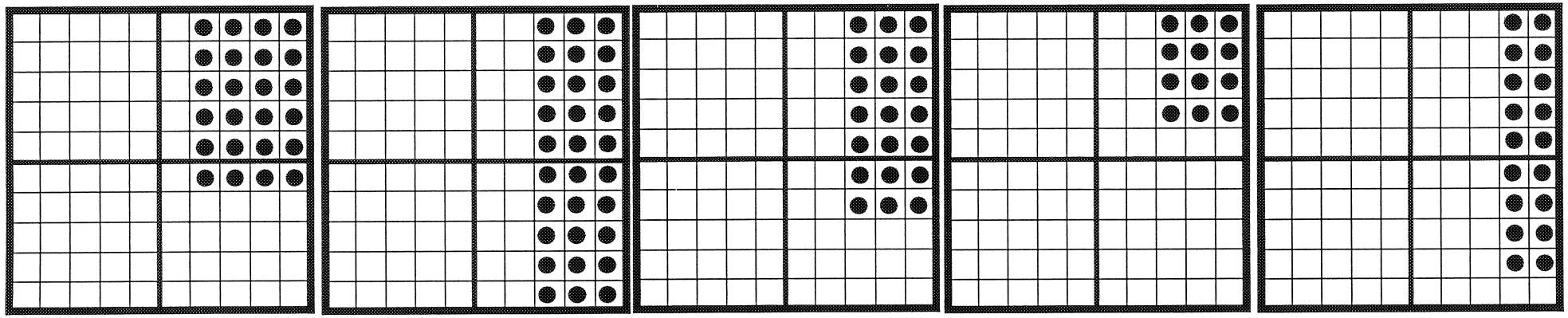


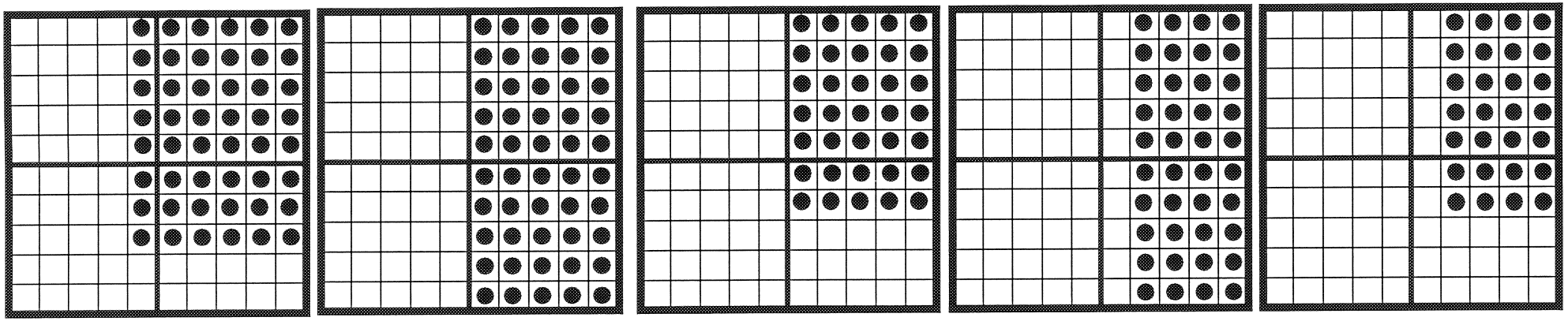
Cut into individual cards (each 10 x 10 square is one card).

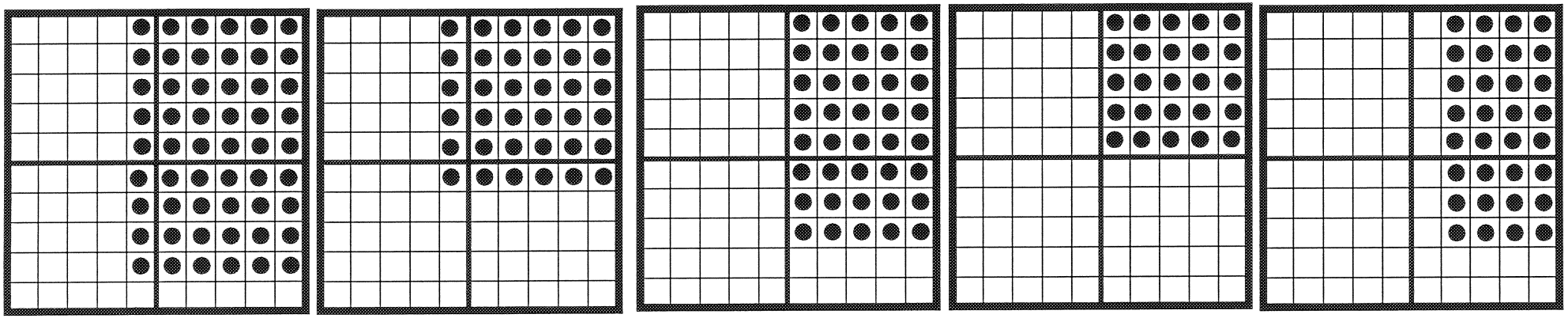




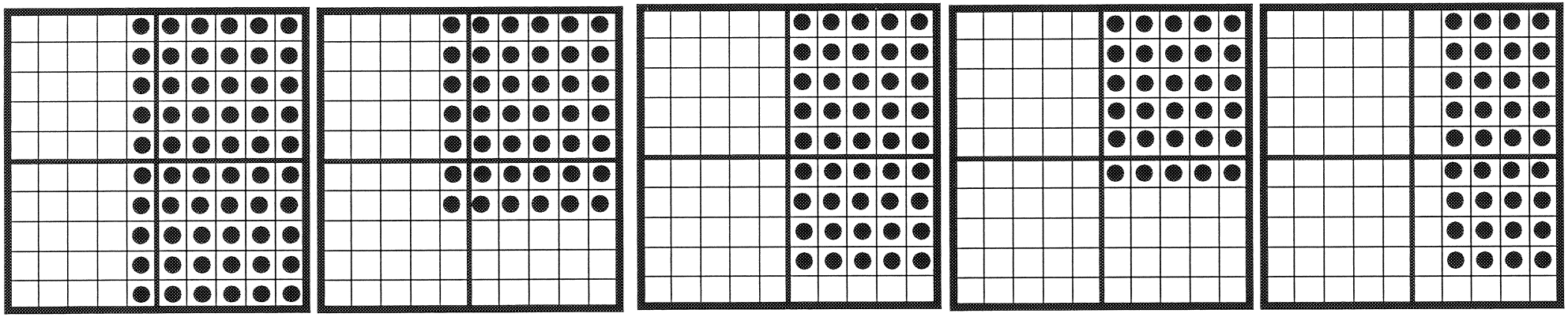
Cut into individual cards (each 10 x 10 square is one card).



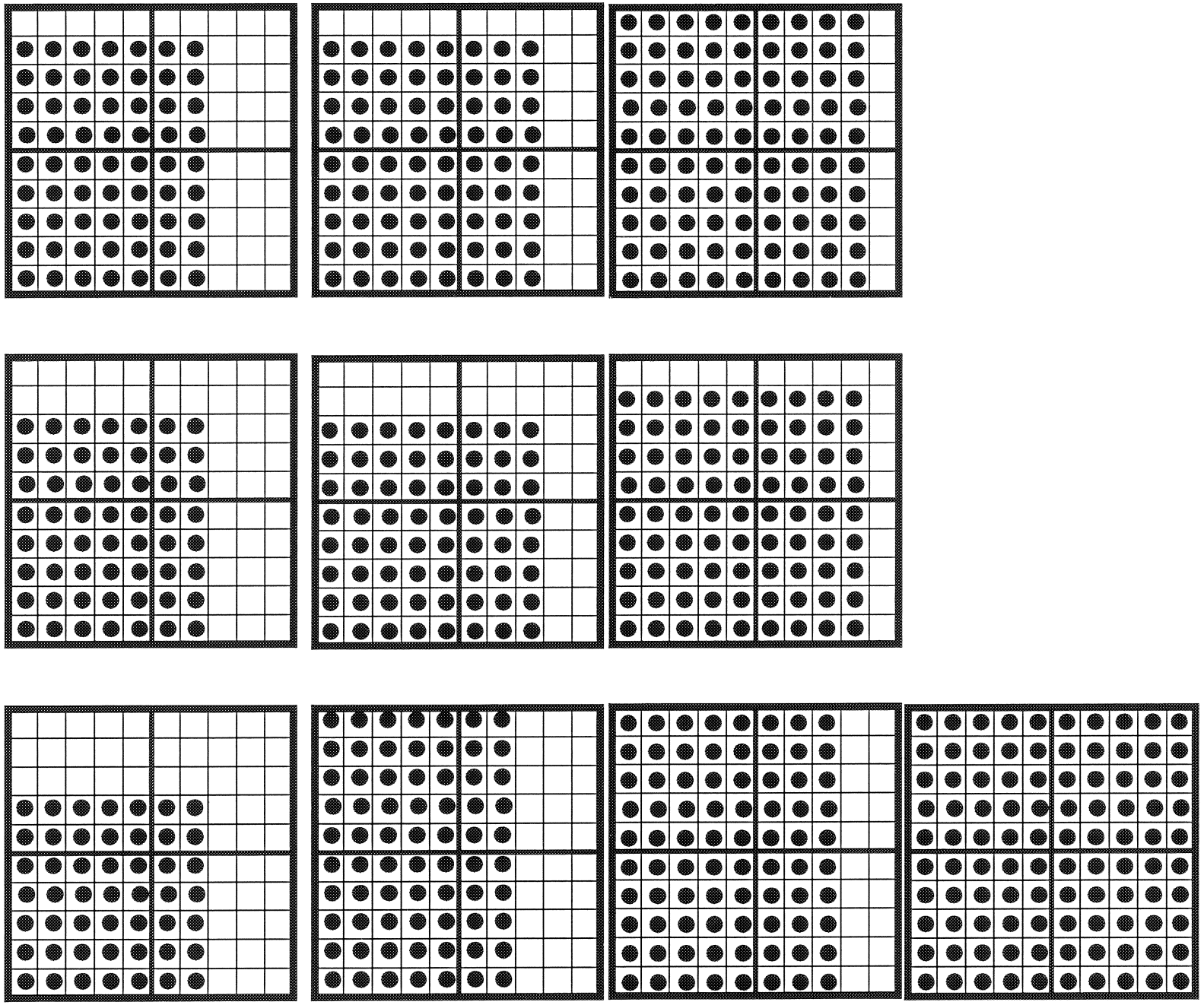




Cut into individual cards (each 10 x 10 square is one card).

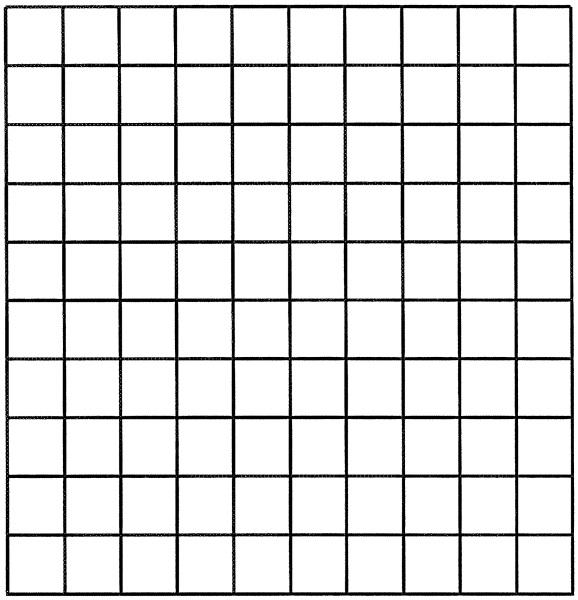


Blackline–32



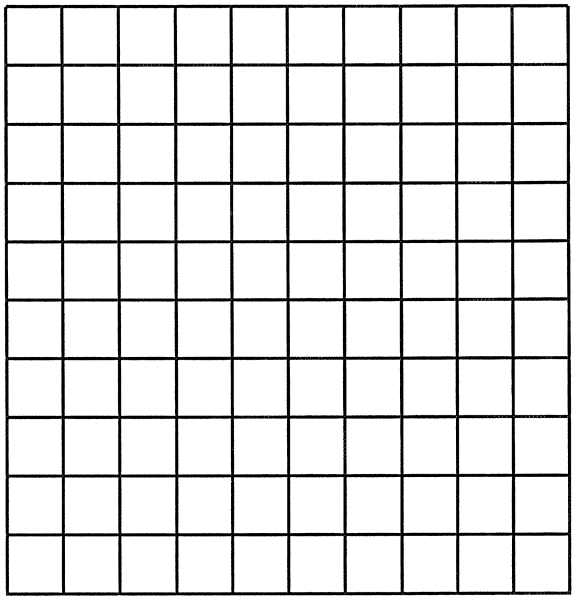
Cut into individual cards (each 10 x 10 square is one card).

Break 100



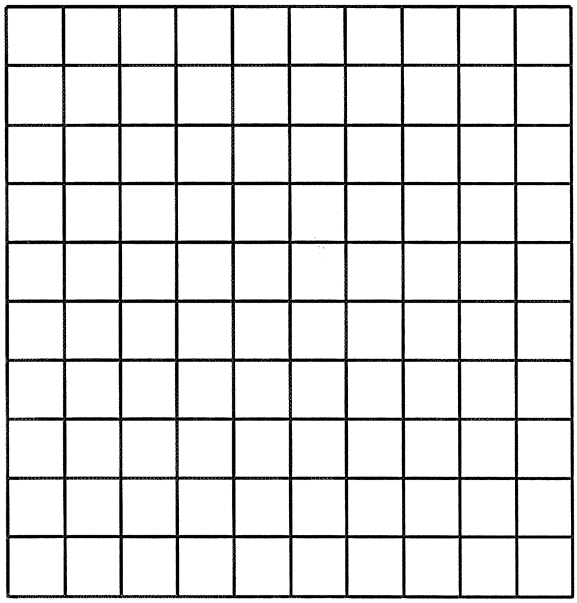
Name _____

Break 100



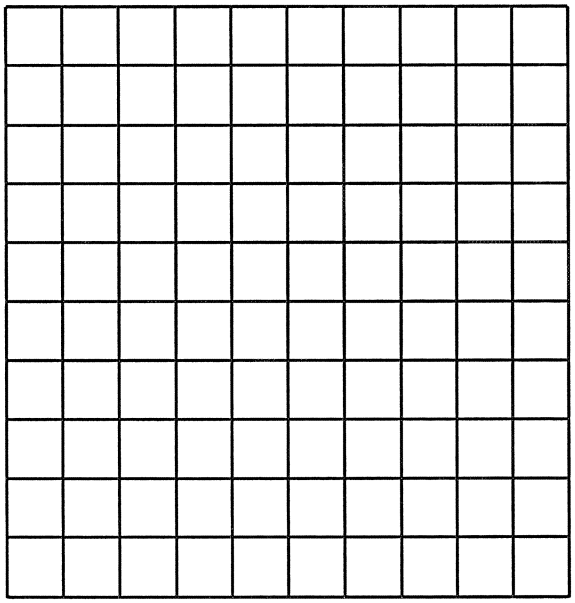
Name _____

Break 100



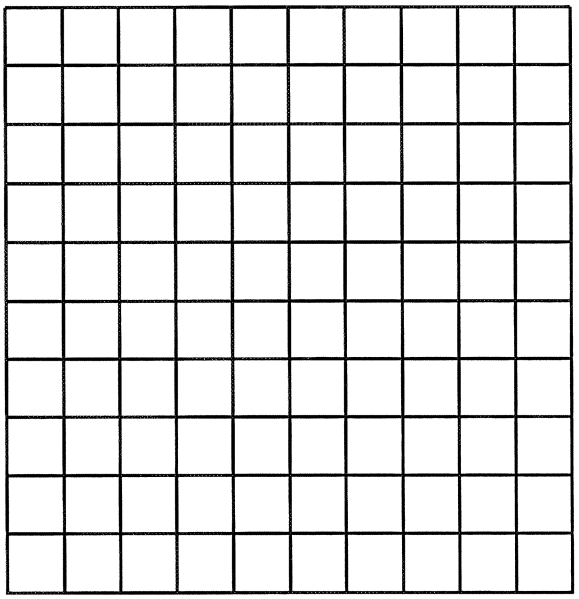
Name _____

Break 100



Name _____

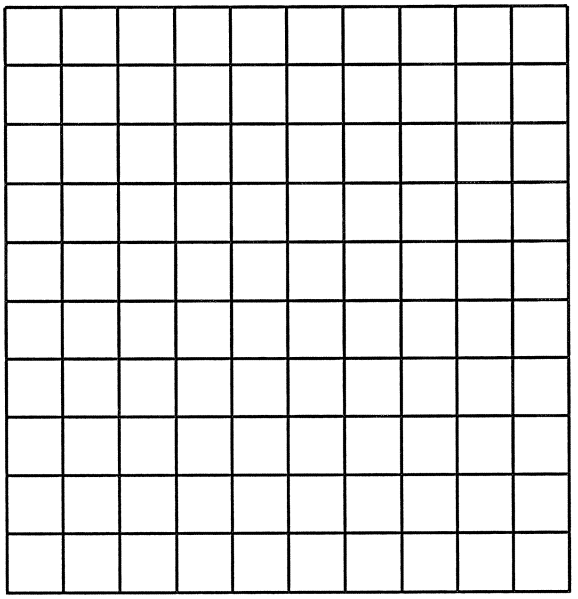
Fitting Rectangular Arrays



Name _____

Date _____

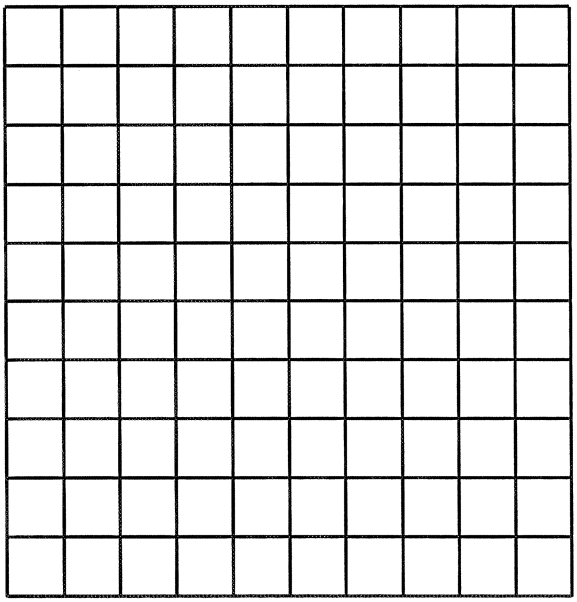
Fitting Rectangular Arrays



Name _____

Date _____

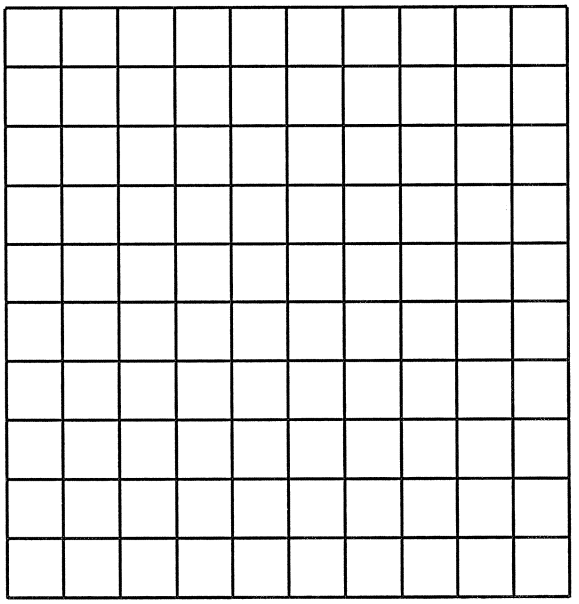
Fitting Rectangular Arrays



Name _____

Date _____

Fitting Rectangular Arrays



Name _____

Date _____

Name _____

Decimal Collections			
Units	Tenths Strips 1/10	Hundreths Square 1/100	Total # of Pieces

Name _____

Decimal Collections			
Units	Tenths Strips 1/10	Hundreths Square 1/100	Total # of Pieces

CAPTURE THE ARRAY

given name	secret name (dimensions of rectangles)	secret code (factors)	related facts*

* such as: prime, not prime, composite, even, odd, not even, not odd, etc.

CAPTURE THE ARRAY

given name	secret name (dimensions of rectangles)	secret code (factors)	related facts

* such as: prime, not prime, composite, even, odd, not even, not odd, etc.

QUINT
Q
START
U
I
N
T
WINNER

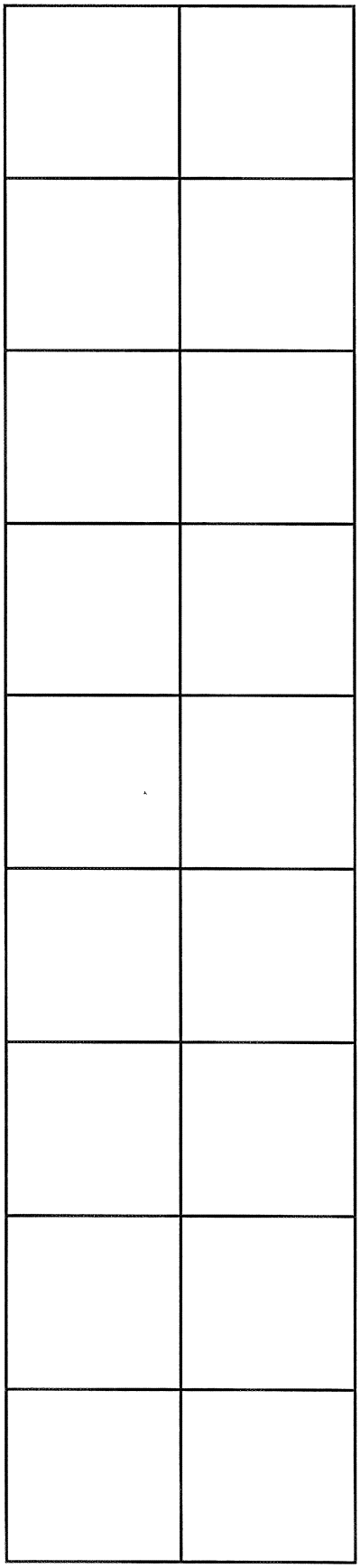
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

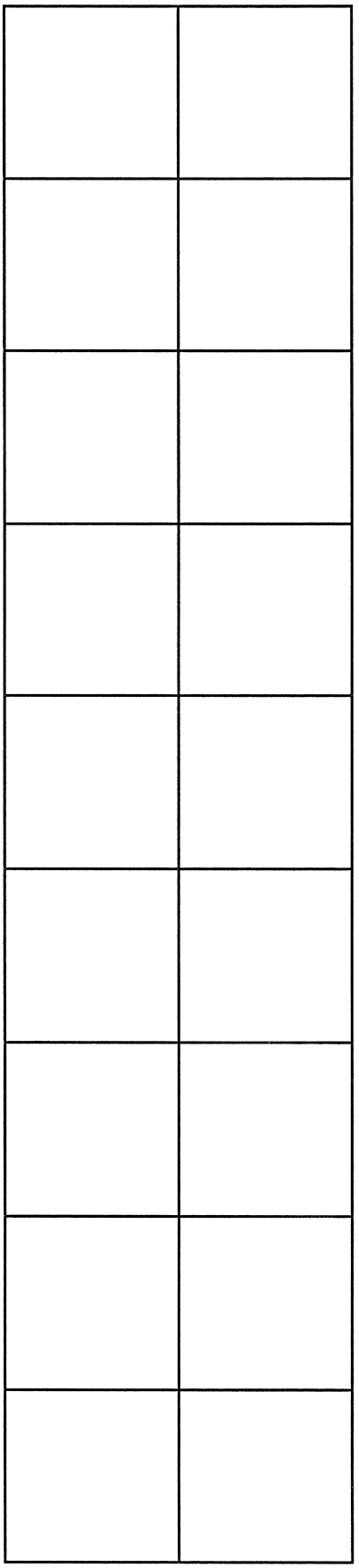
Name _____

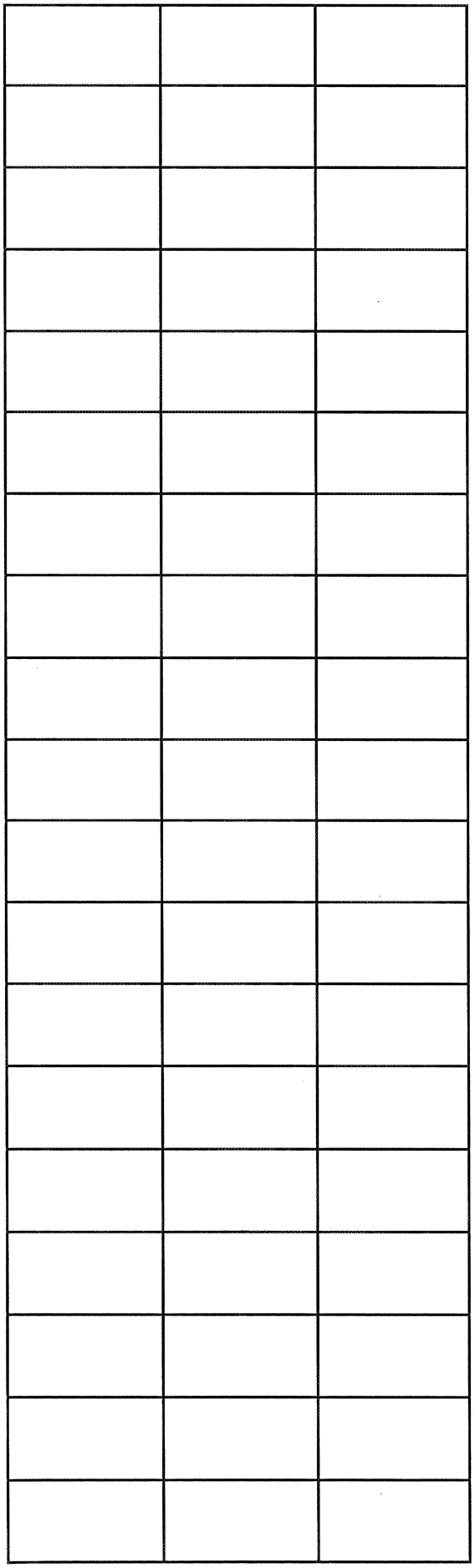
mats	strips	units	number of pieces

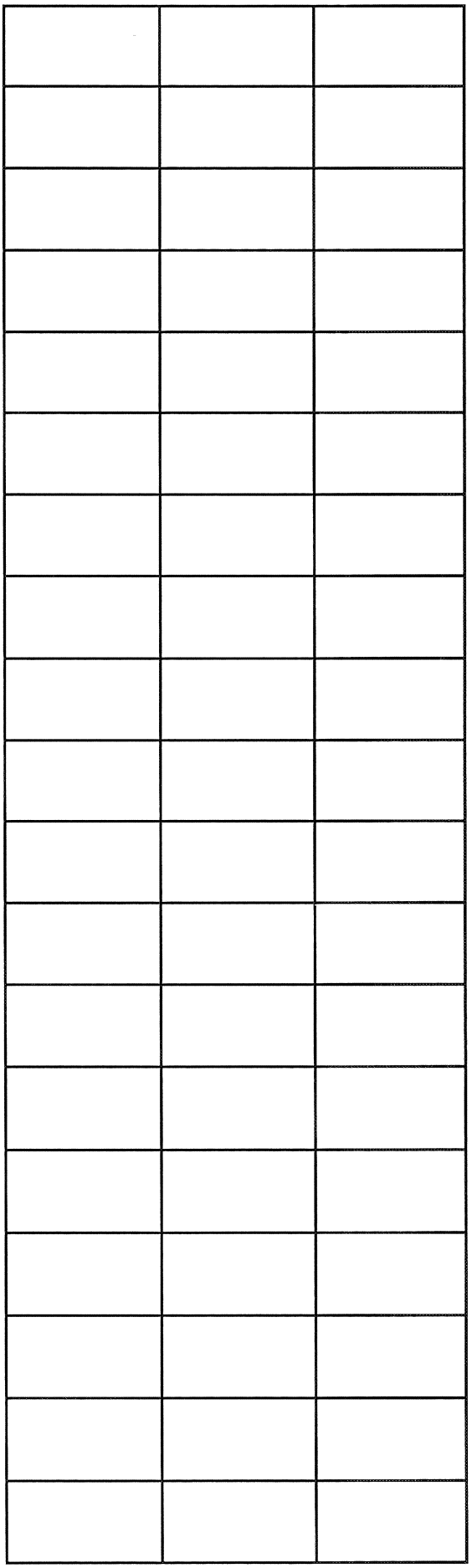
Name _____

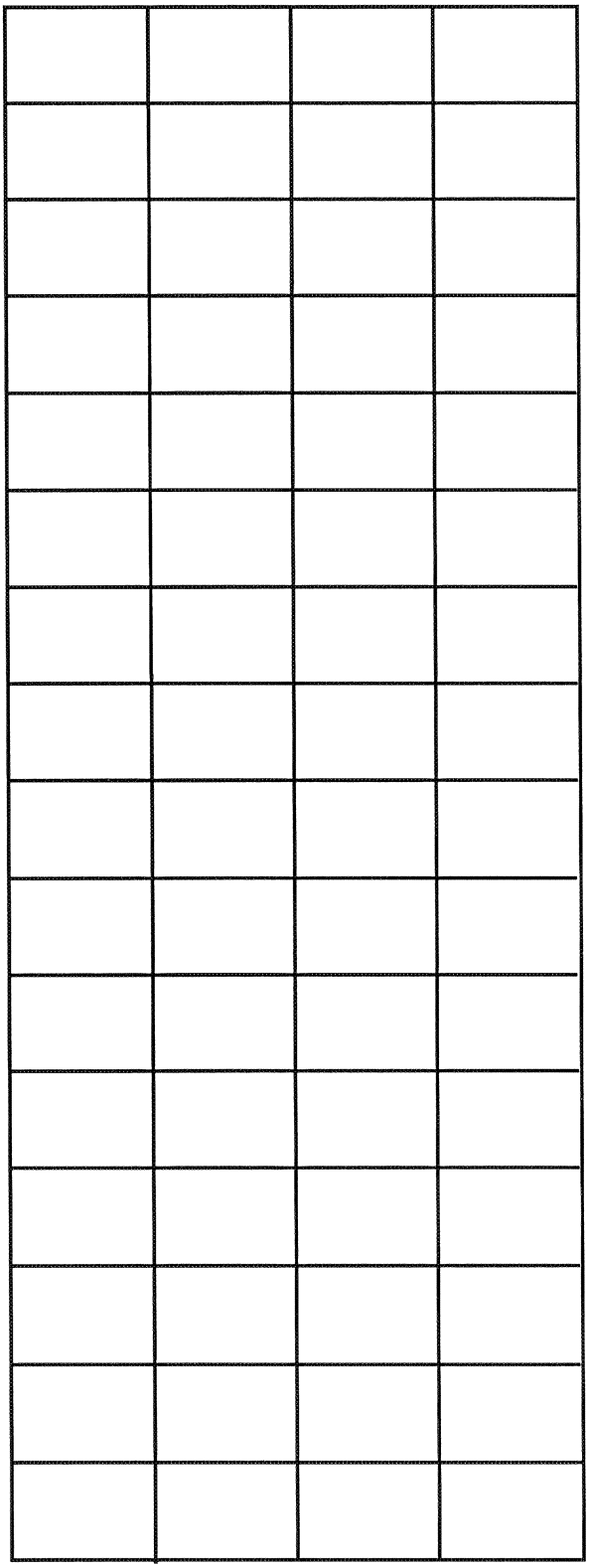
mats	strips	units	number of pieces

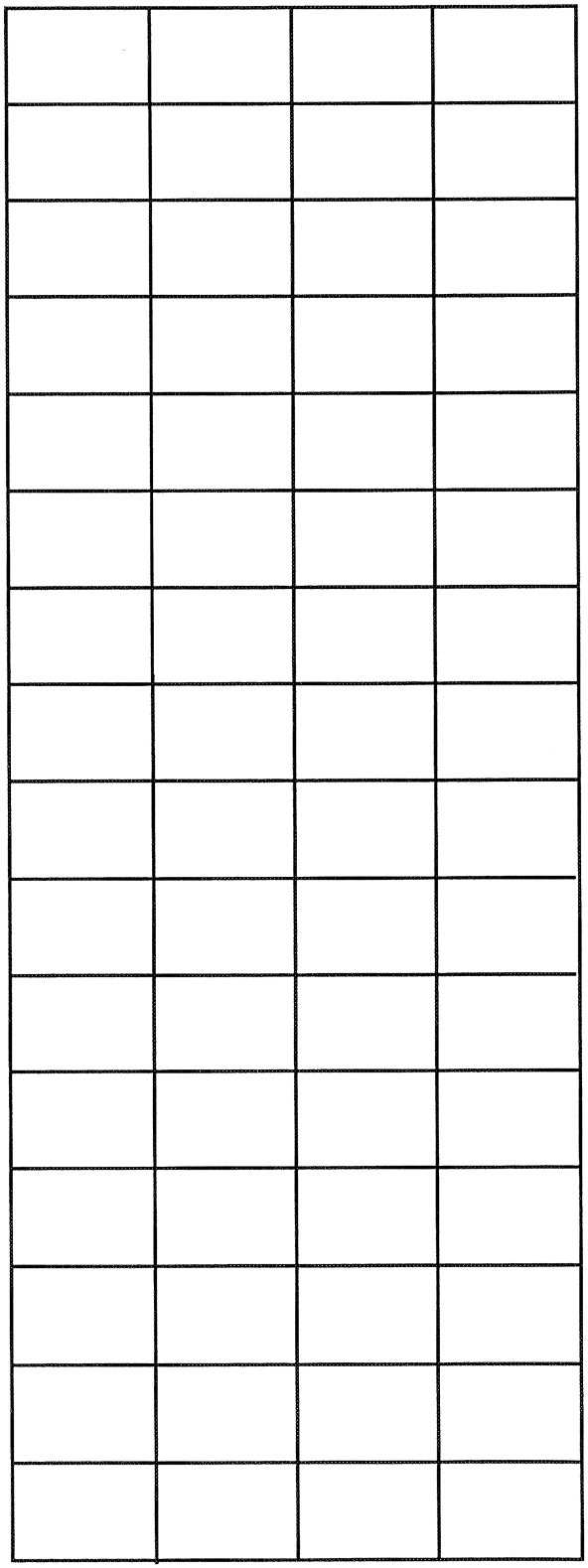


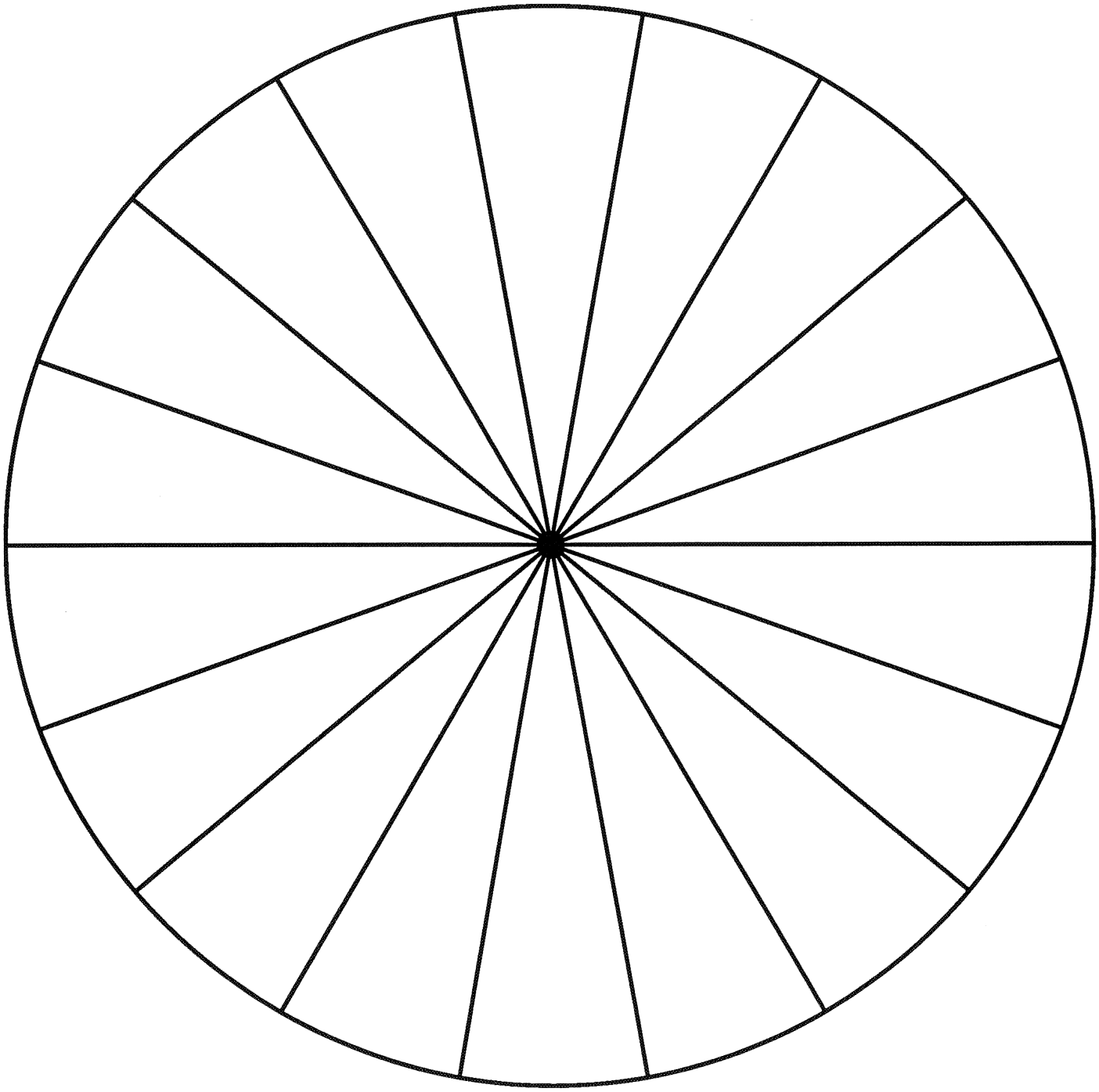






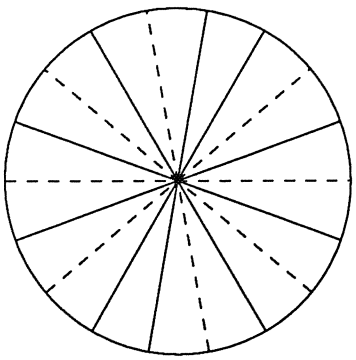


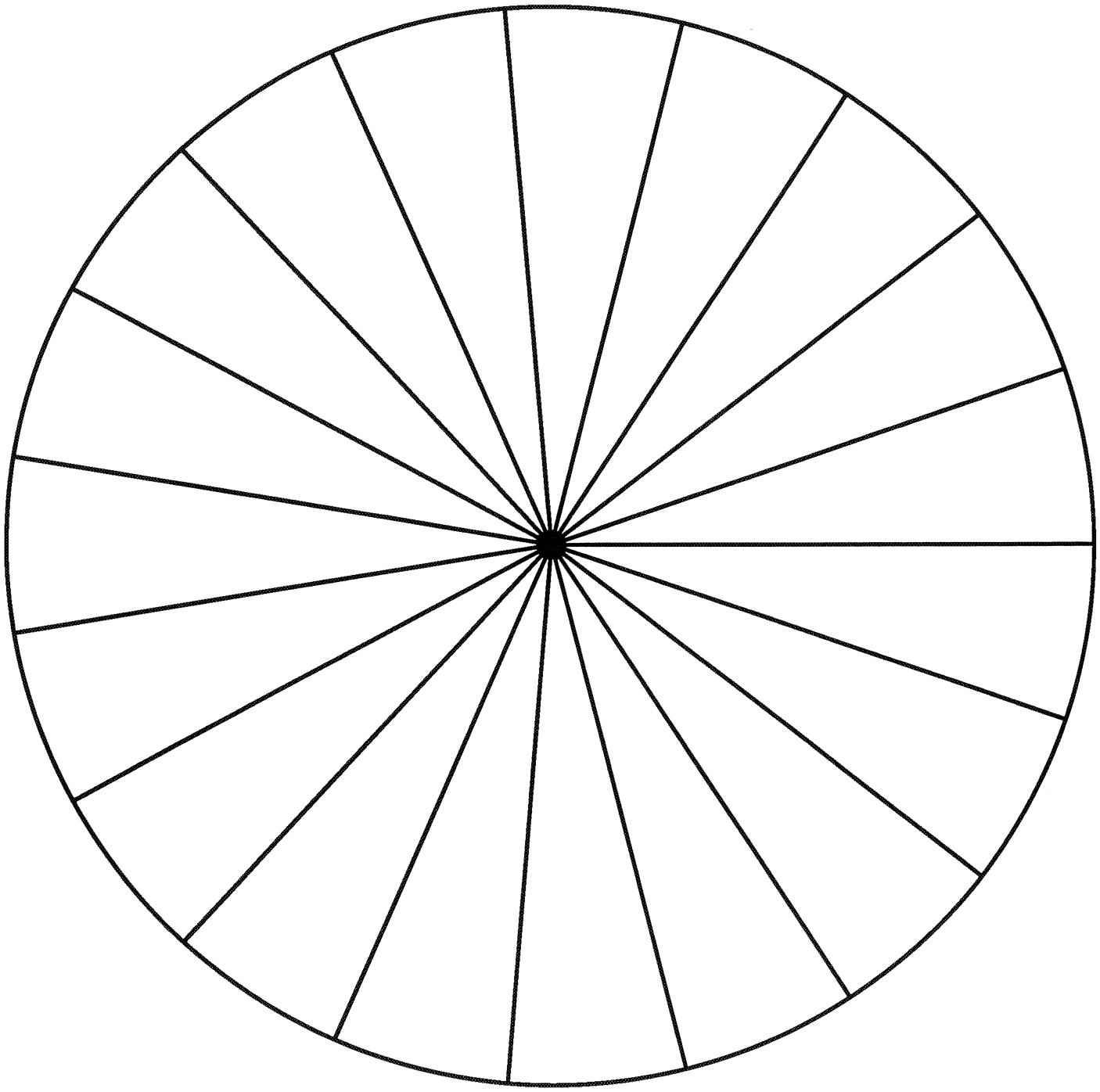




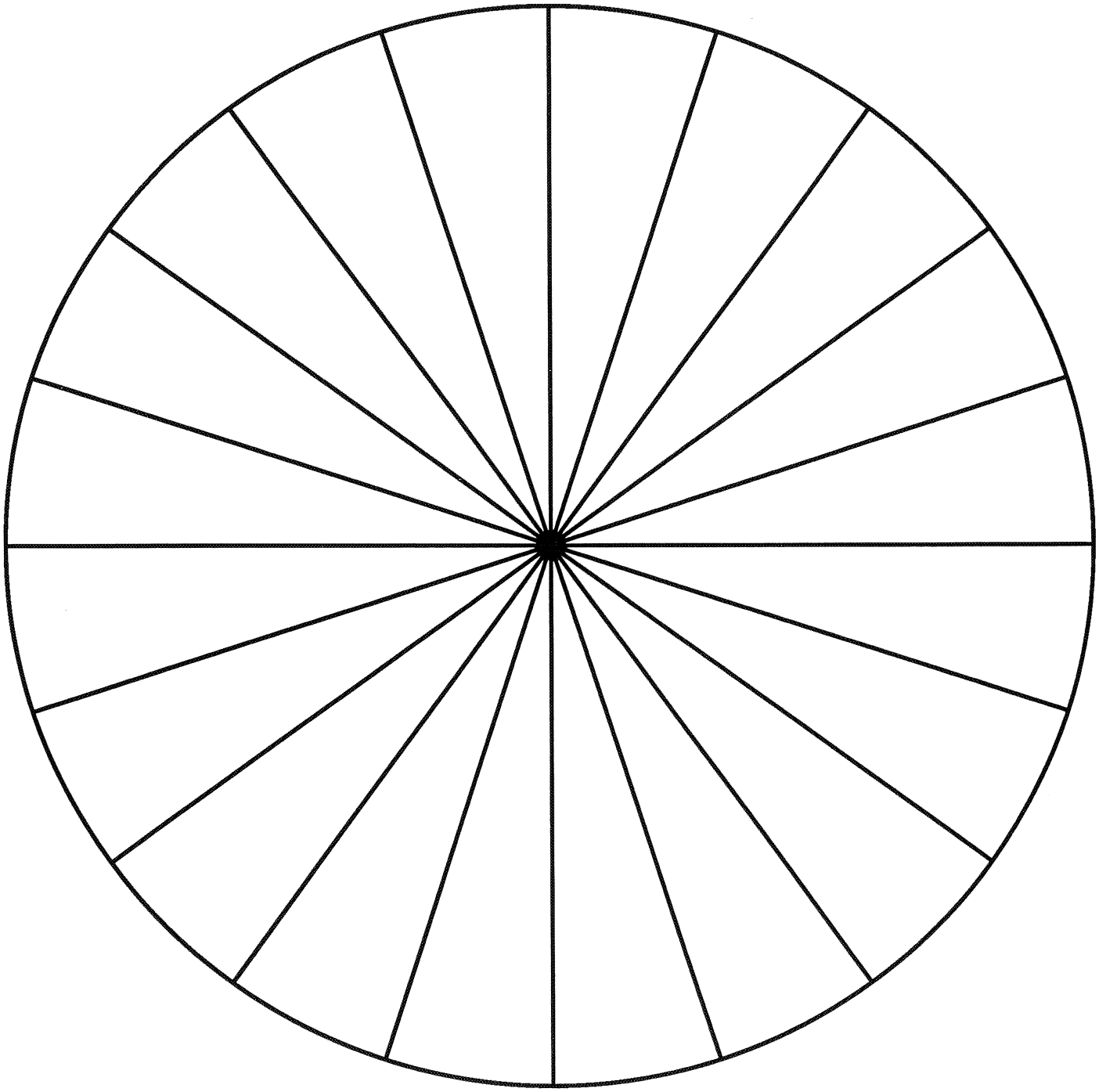
Pie chart—18 sections

Can be adapted for 3, 6, 9 or 36 sections by omitting lines. By omitting every other line a 9-section pie can be created. Example:



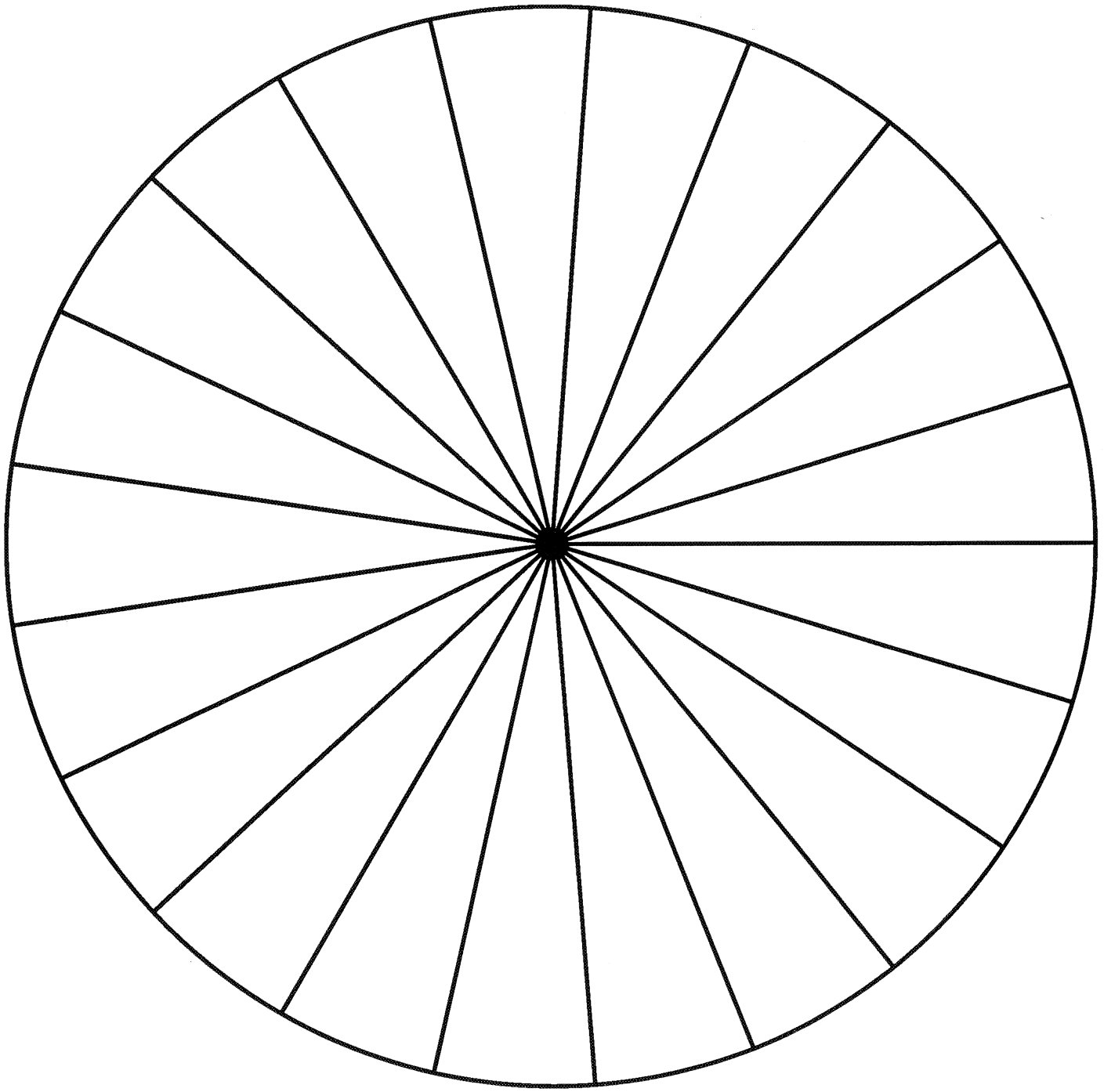


Pie chart—19 sections

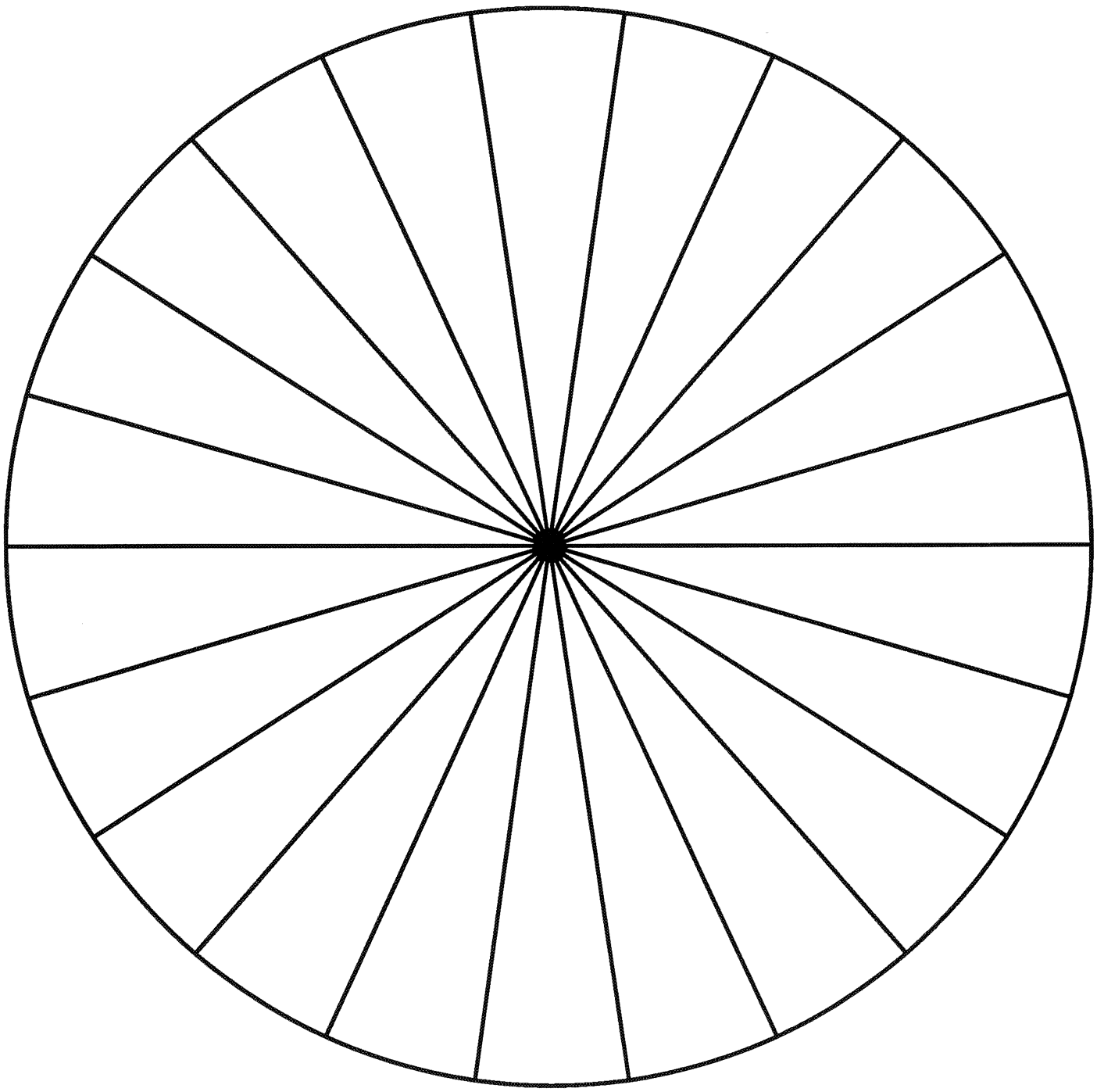


Pie chart—20 sections

Lines can be omitted to create graphs for 4, 5 or 10.

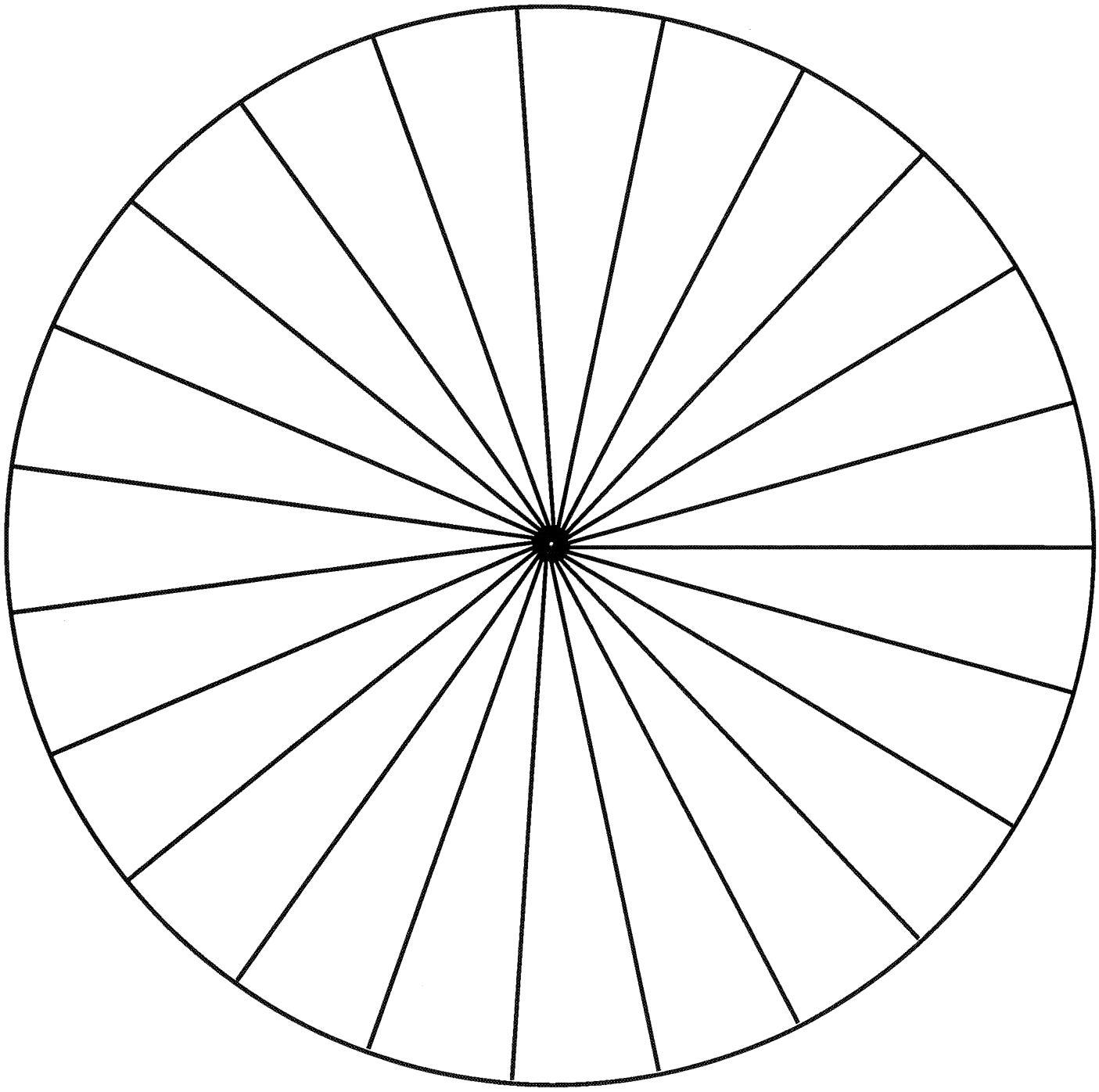


Pie chart—21 sections

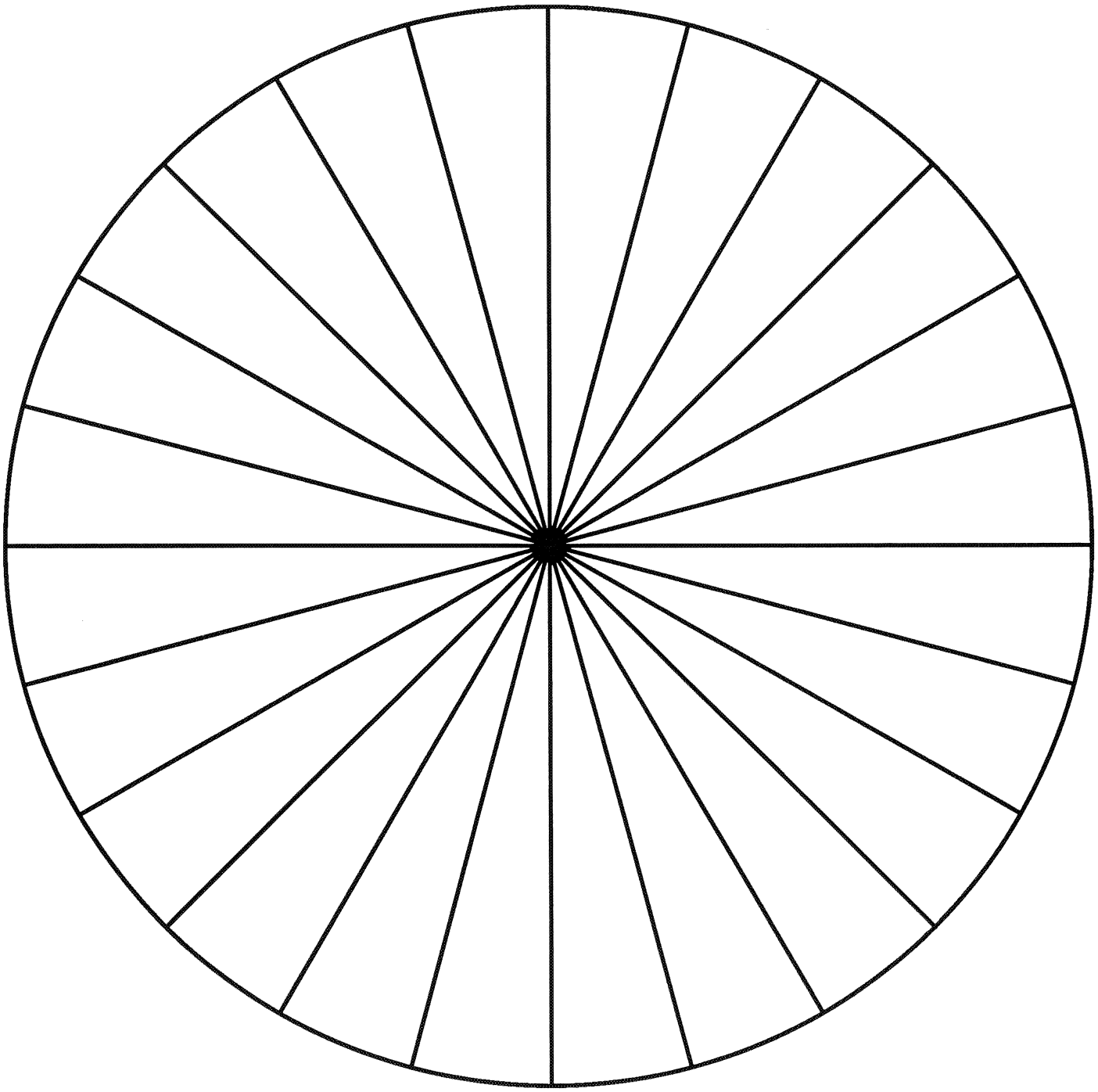


Pie chart—22 sections

Omit every other line for 11 sections.

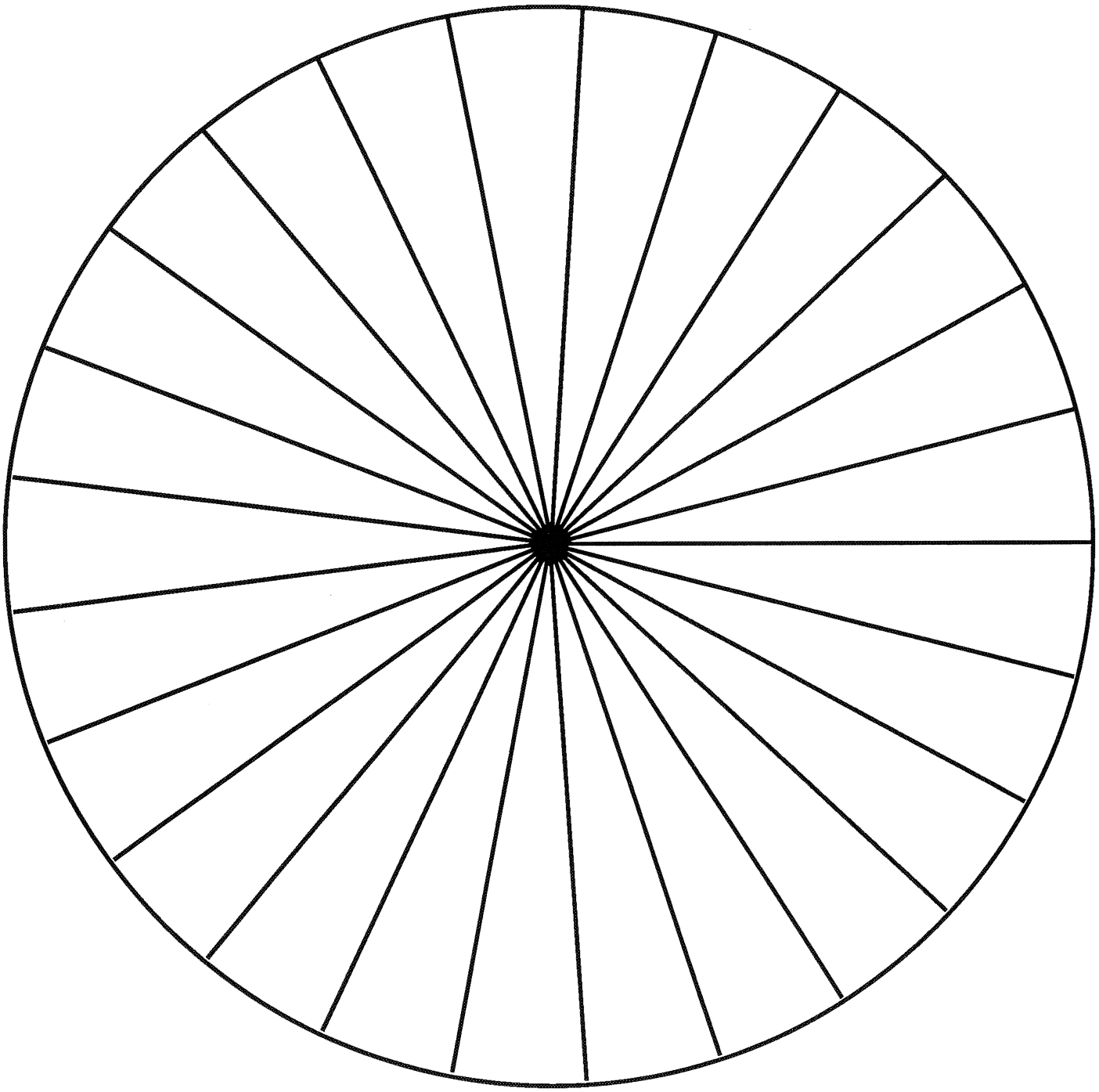


Pie chart—23 sections

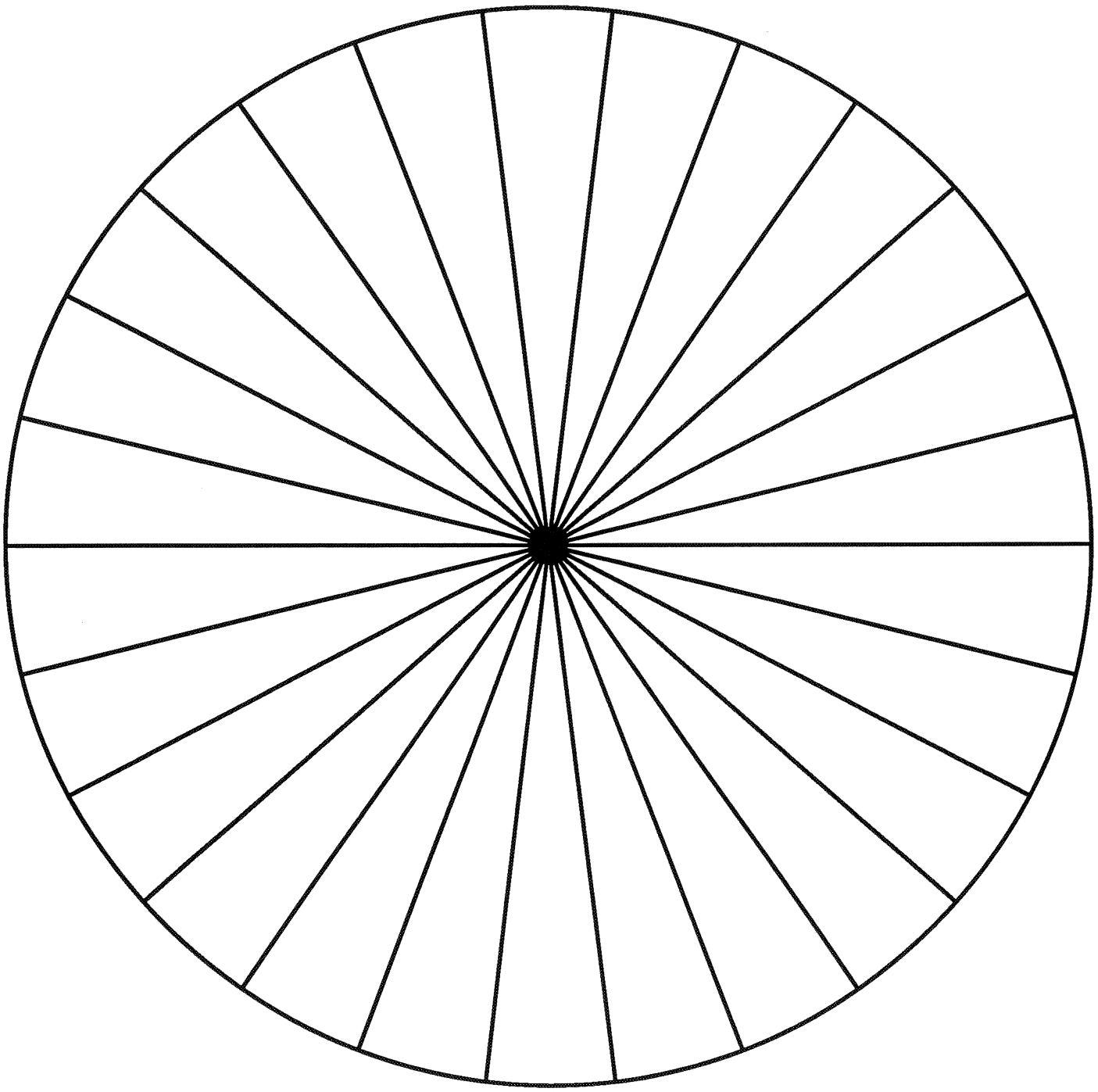


Pie chart—24 sections

Lines can be omitted for 4, 6 or 12 sections

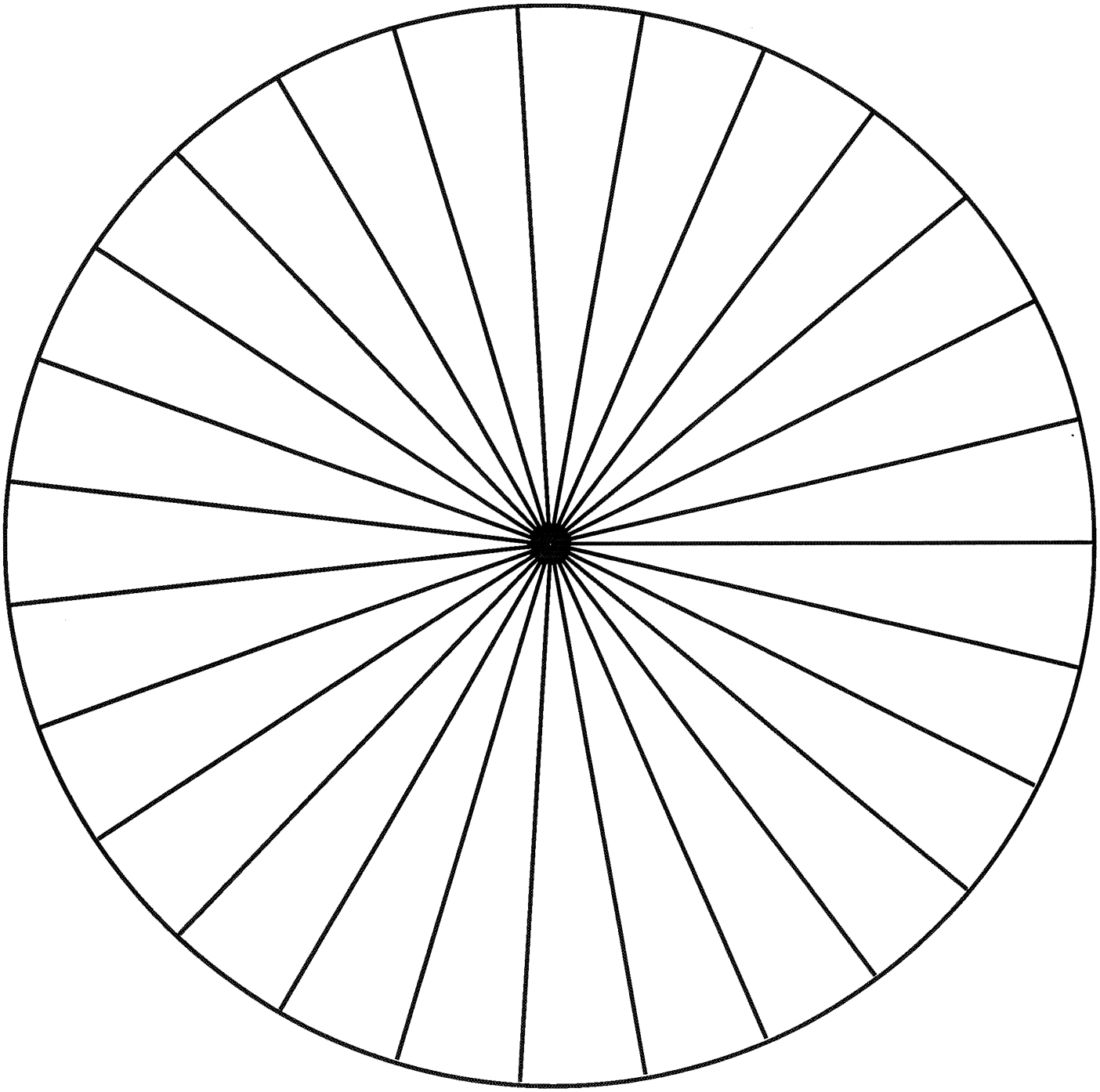


Pie chart—25 sections

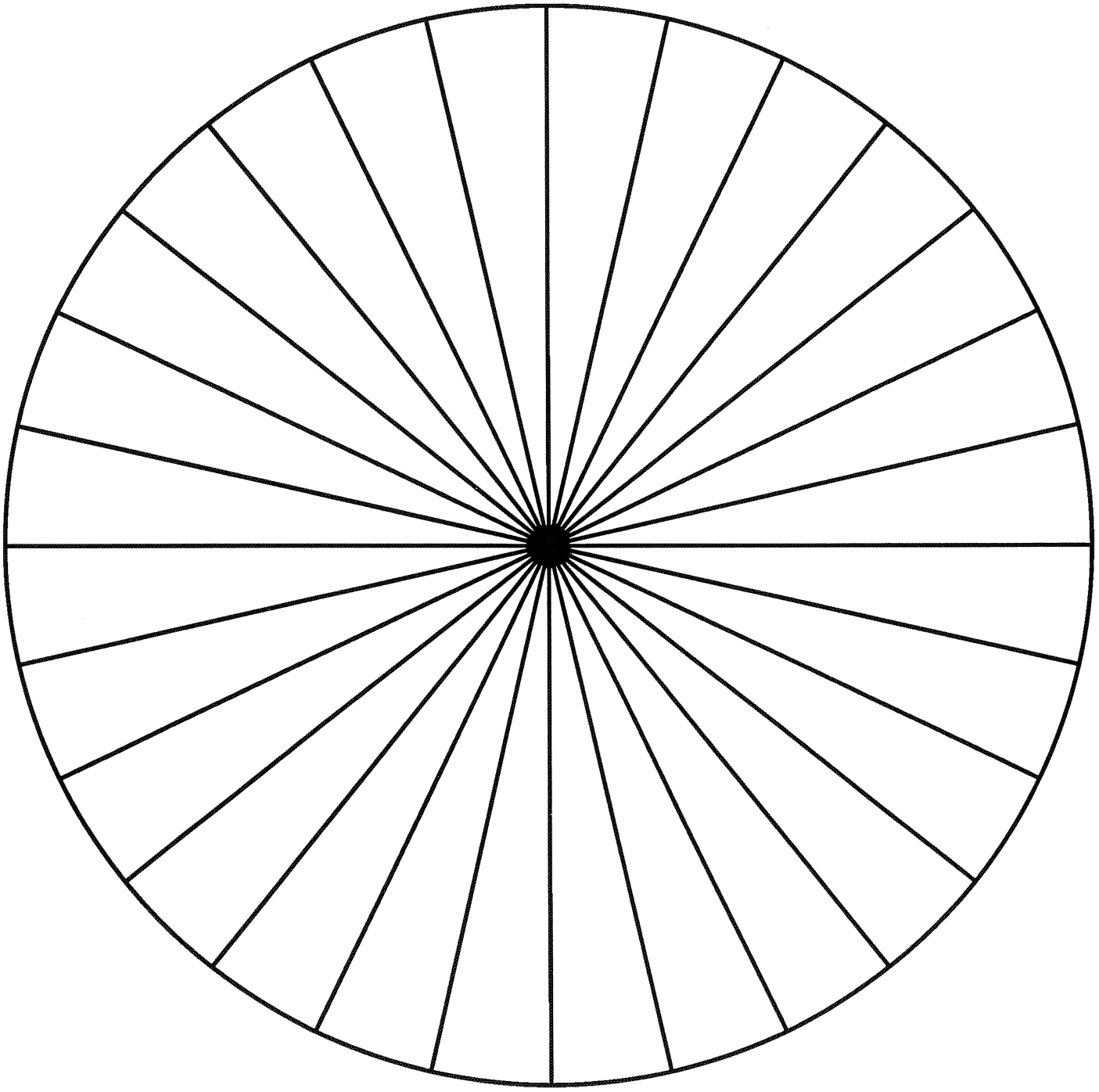


Pie chart—26 sections

Omit every other line for 13 sections.

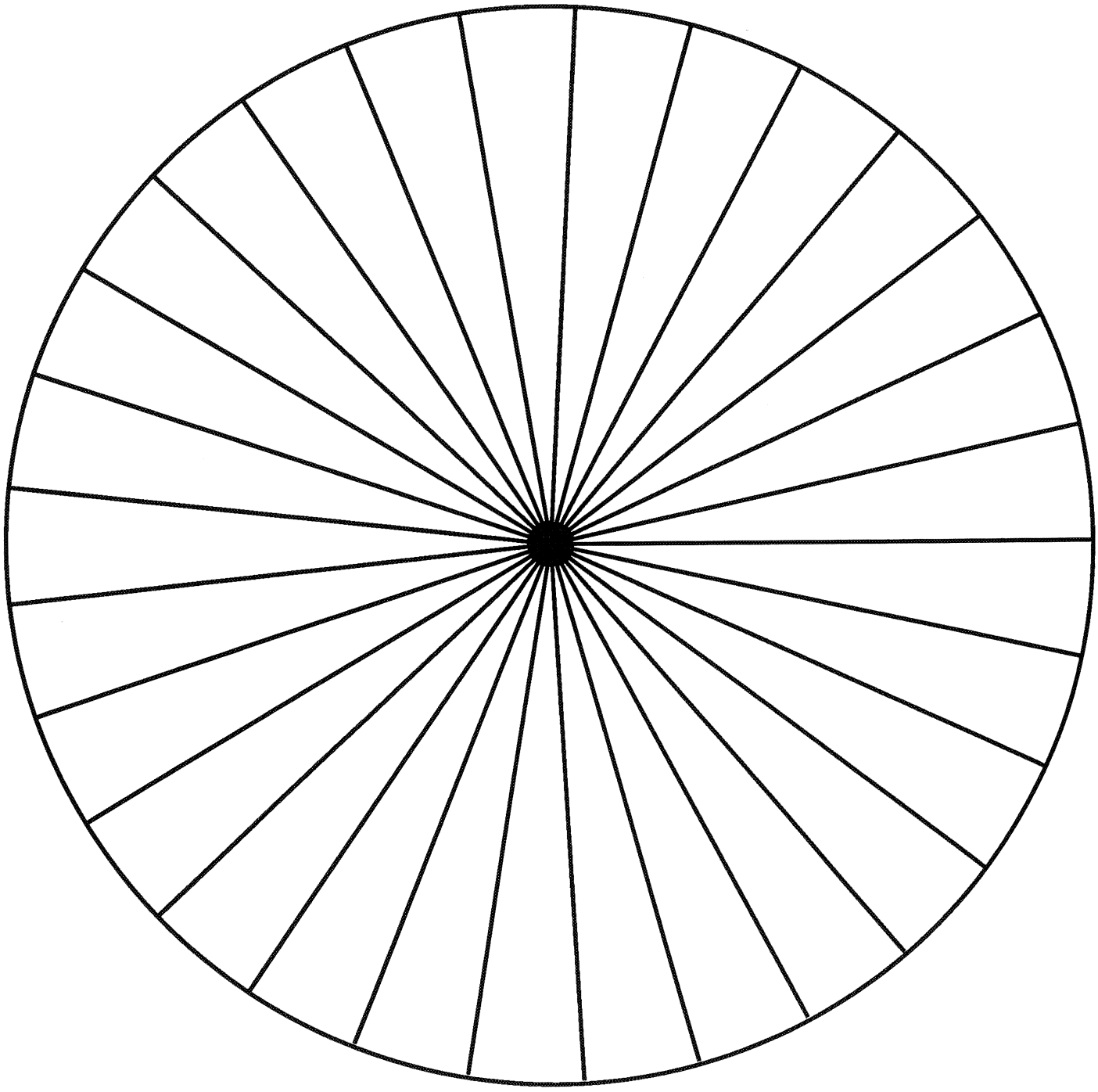


Pie Chart—27 sections

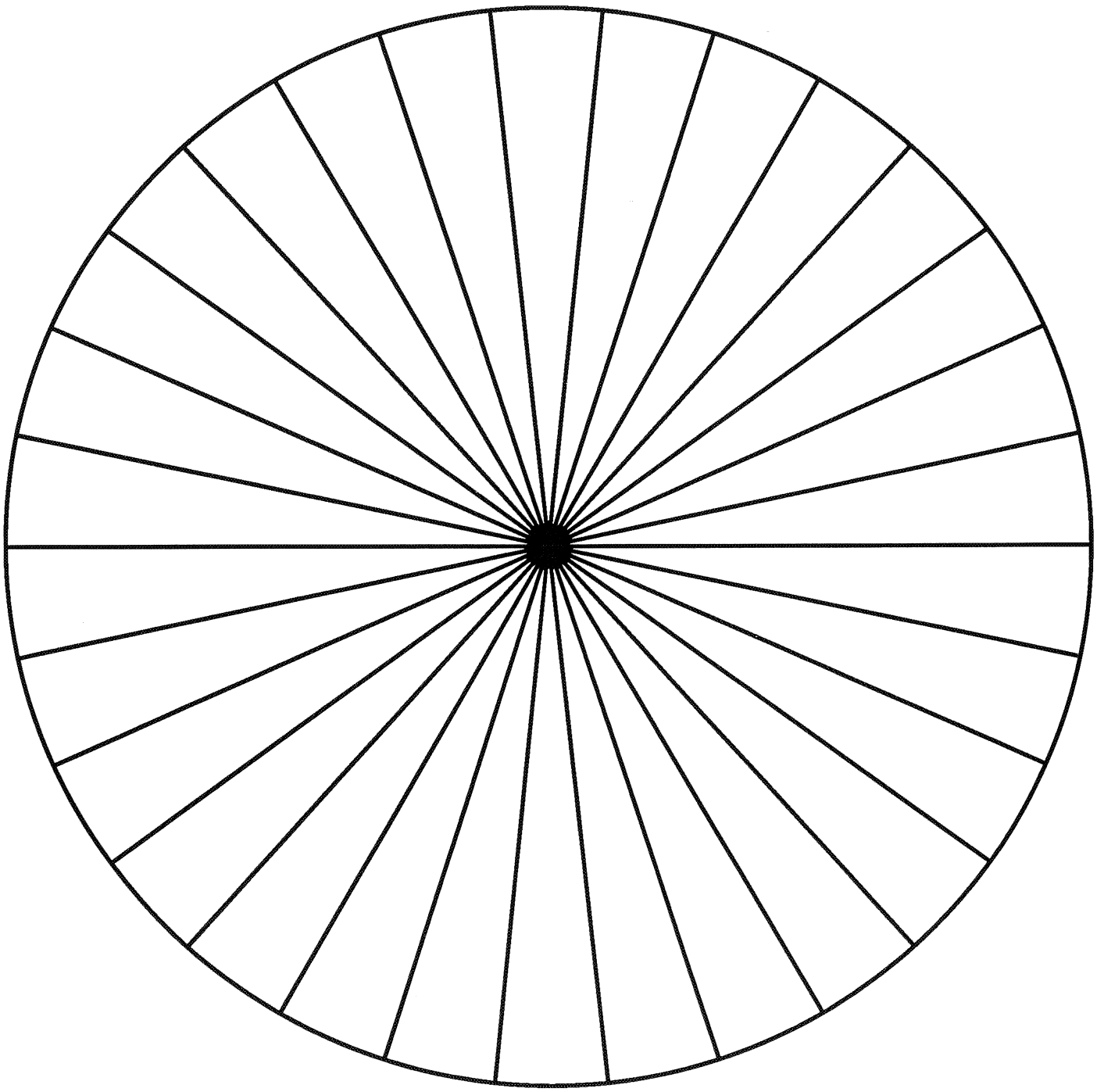


Pie Chart—28 sections

Omit every other line for a 14-section graph or
3 of every 4 for a 7-section graph.

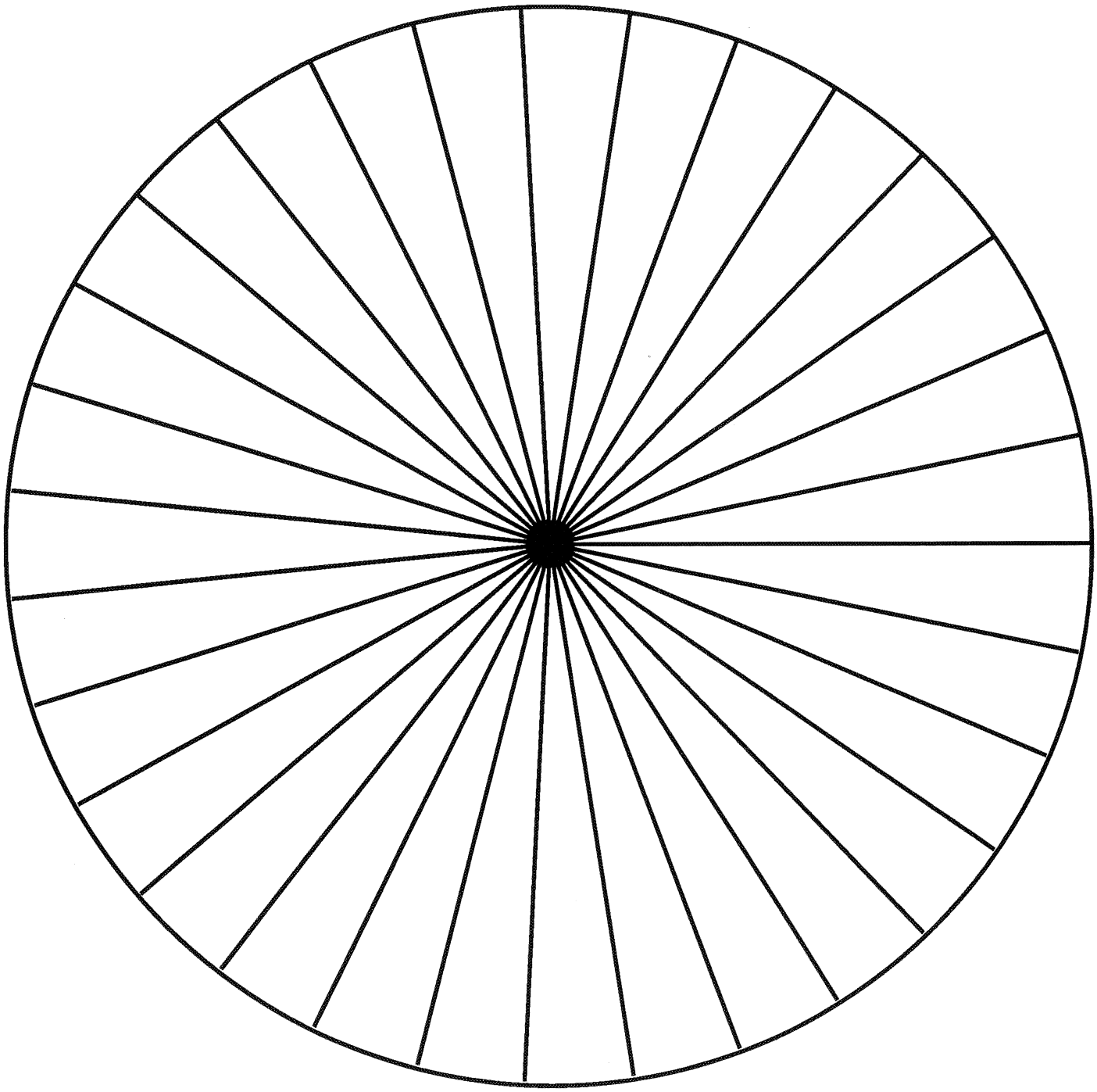


Pie chart—29 sections

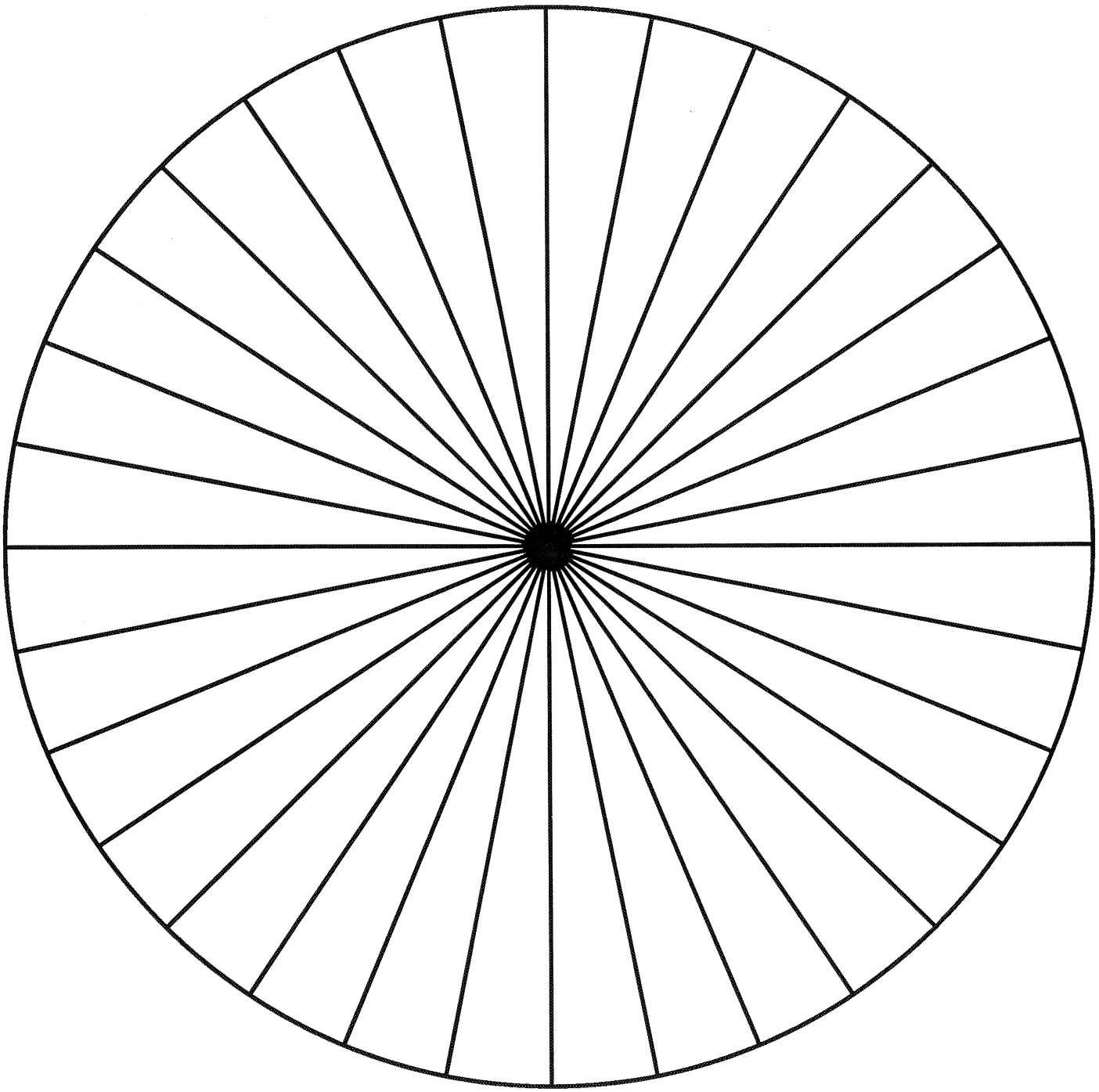


Pie chart—30 sections

Omit every other line for a 15-section graph.



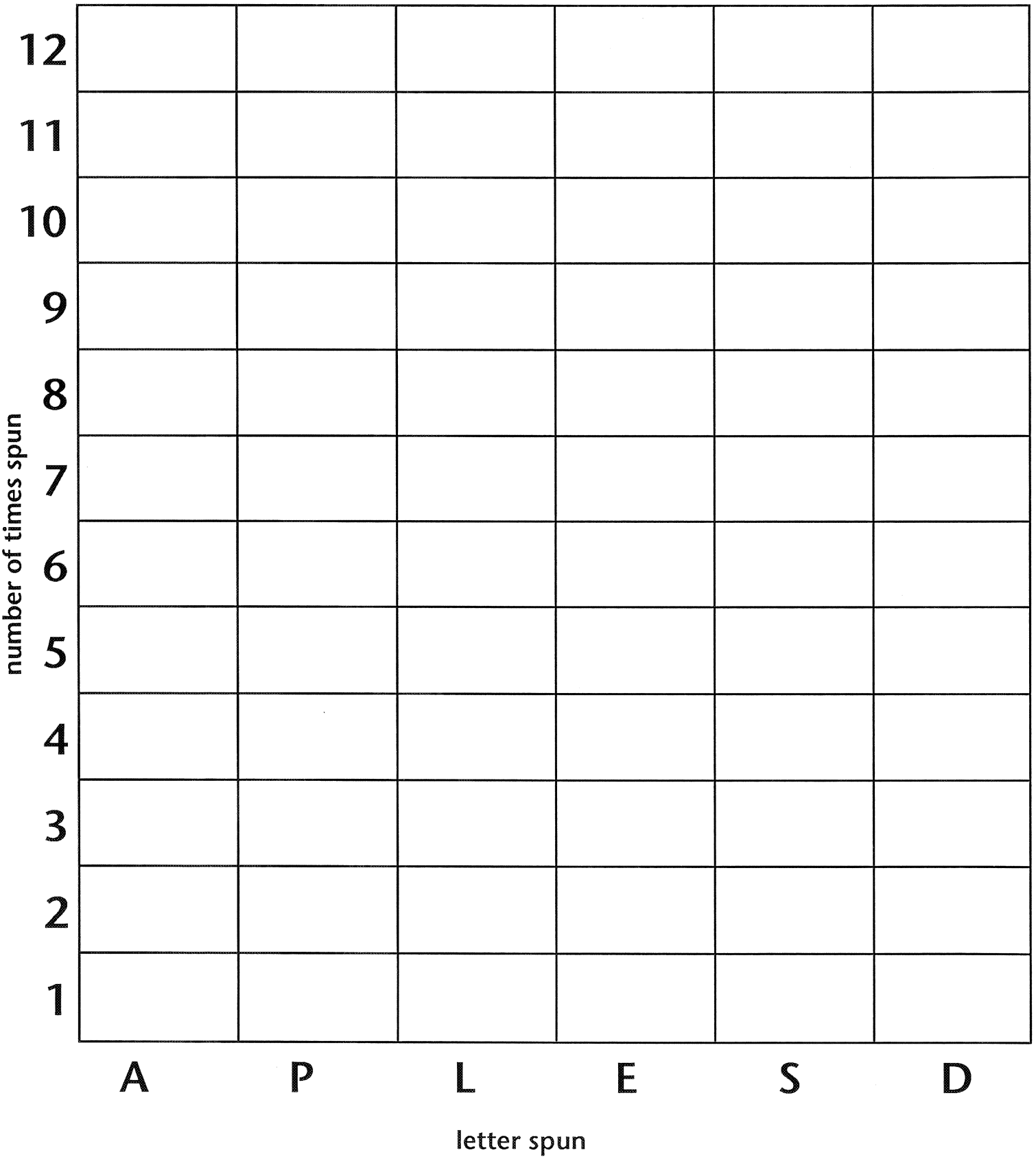
Pie chart—31 sections

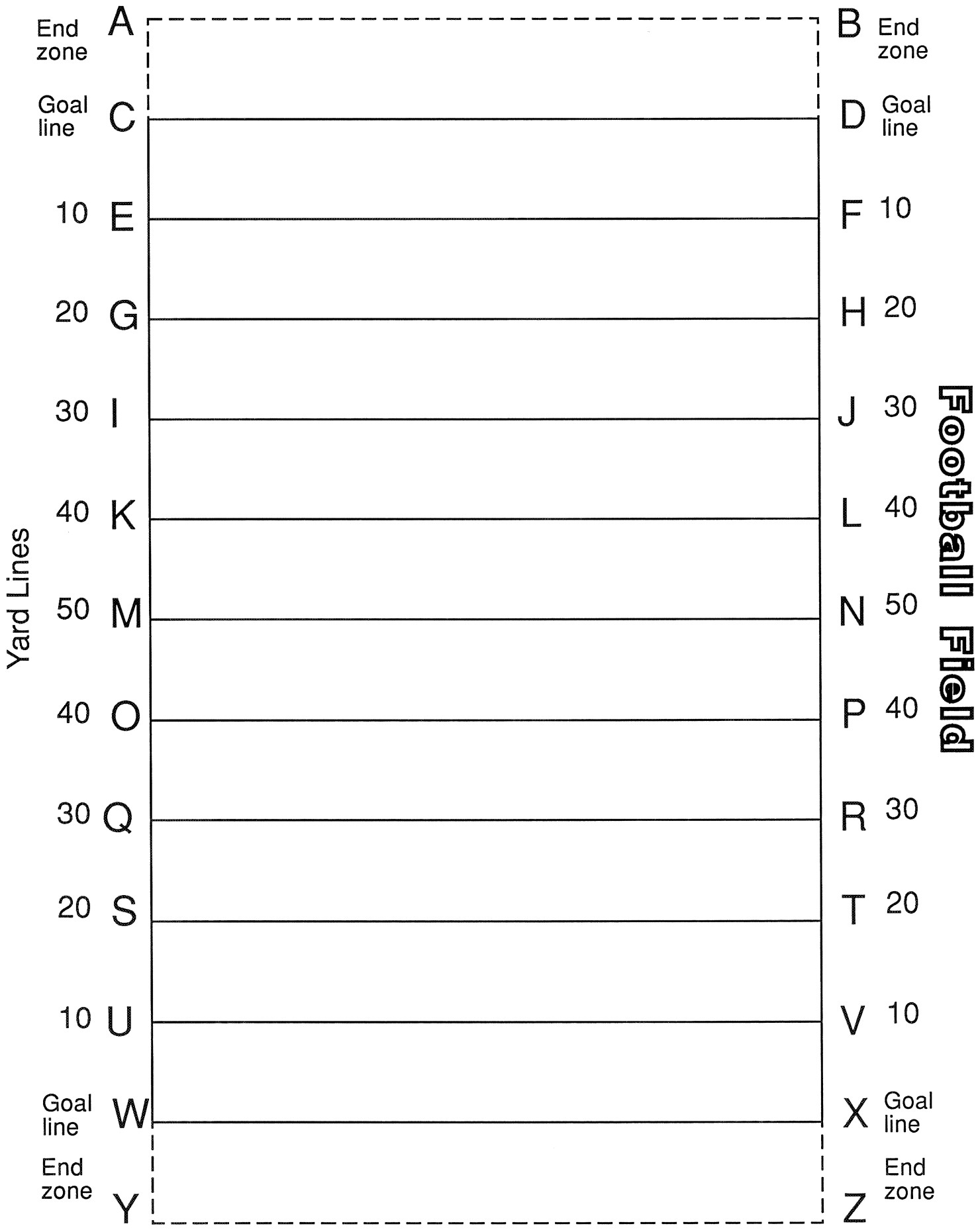


Pie chart—32 sections

Omit every other line for a 16-section graph.

Name _____



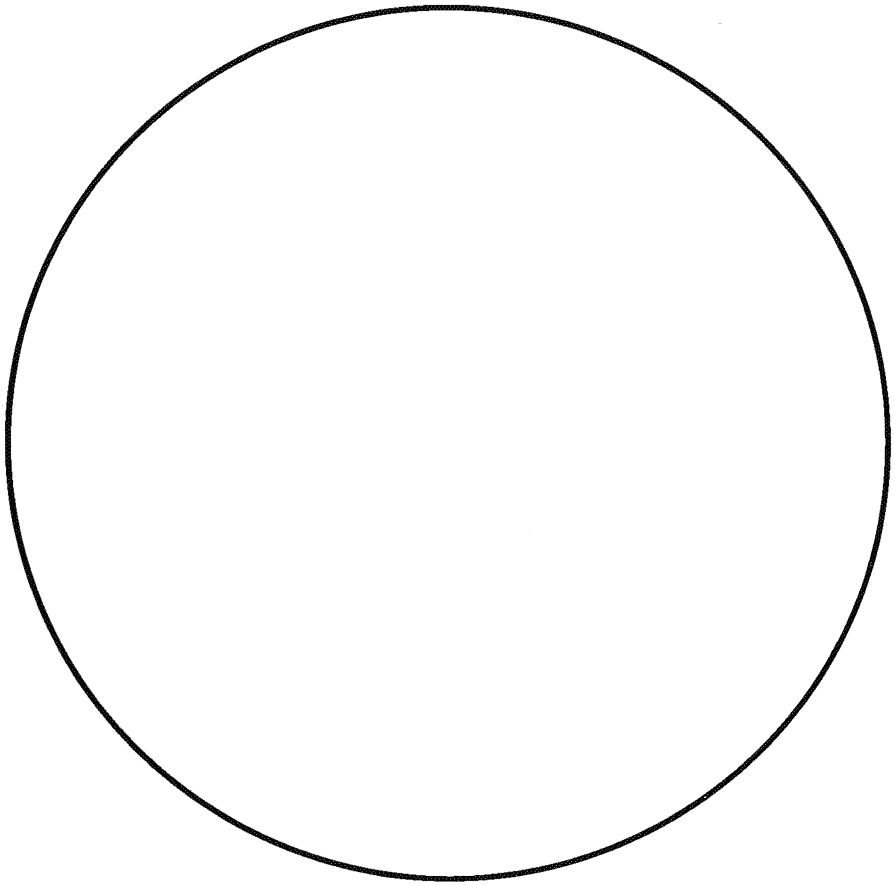

End zone A
B End zone
Goal line C
D Goal line
10 E
F 10
20 G
H 20
30 I
J 30
40 K
L 40
50 M
N 50
40 O
P 40
30 Q
R 30
20 S
T 20
10 U
V 10
Goal line W
X Goal line
End zone Y
Z End zone
Yard Lines
Football Field

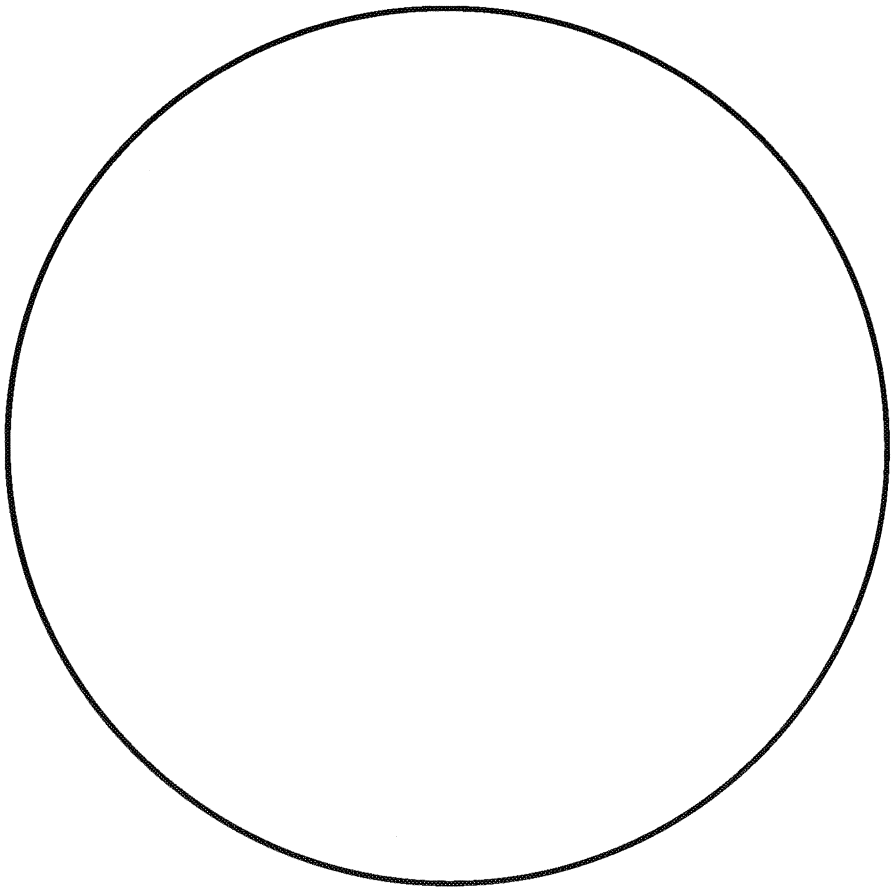
Class Coin Toss

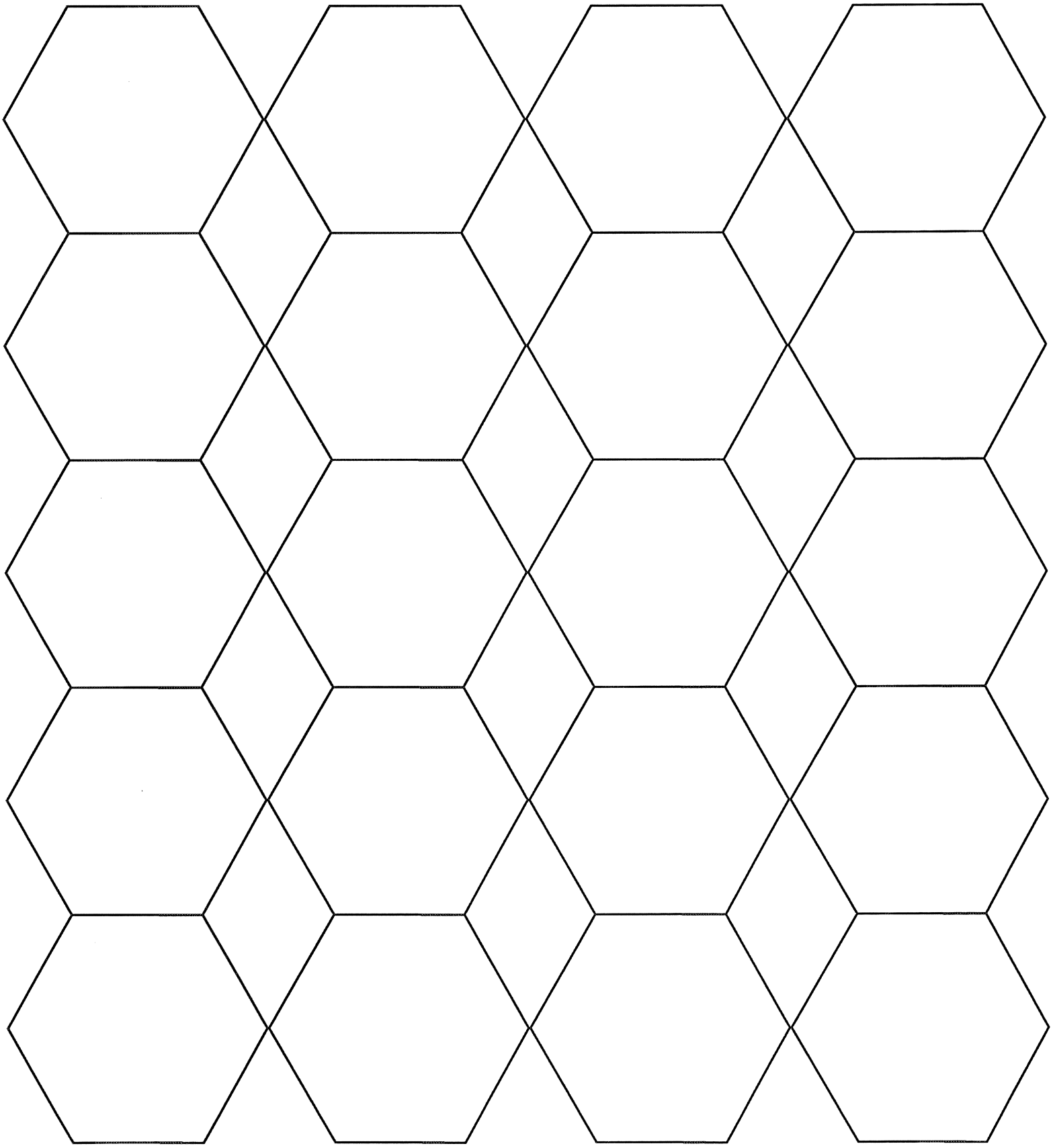
Name _____

Name	First Night		Second Night		Third Night		Fourth Night	
	H	T	H	T	H	T	H	T
Totals	H=	T=	H=	T=	H=	T=	H=	T=

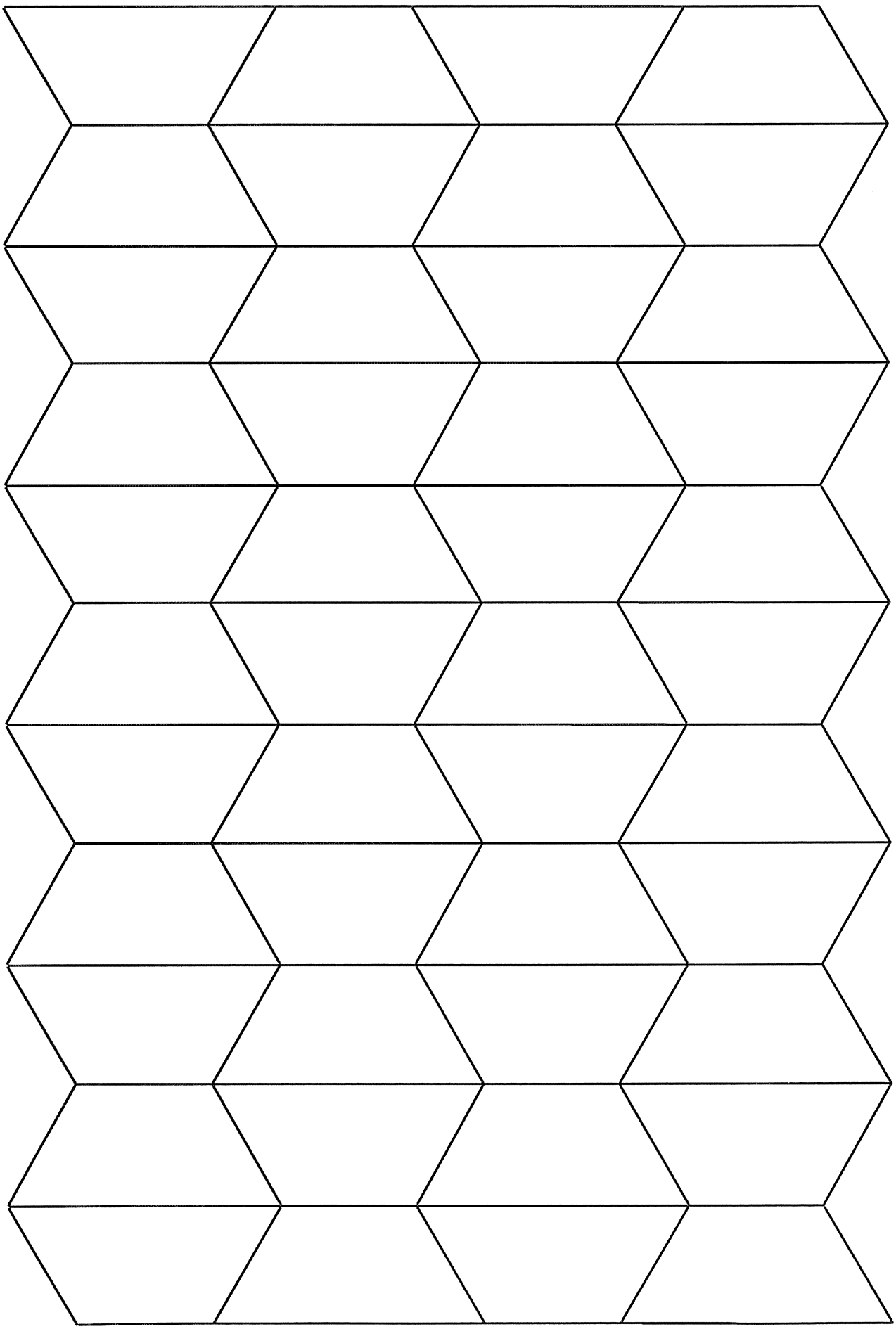
_____ = Heads _____ = Tails



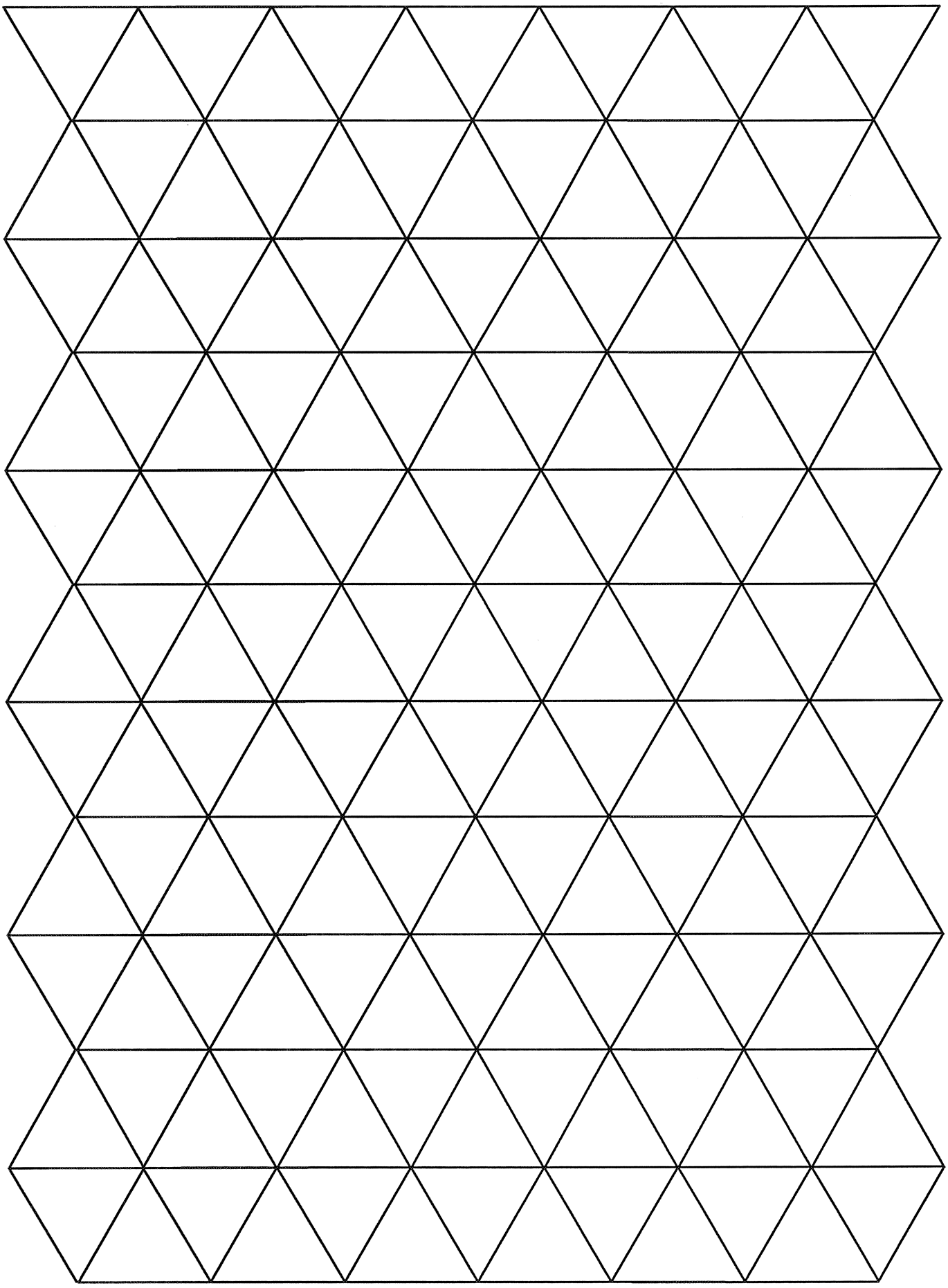




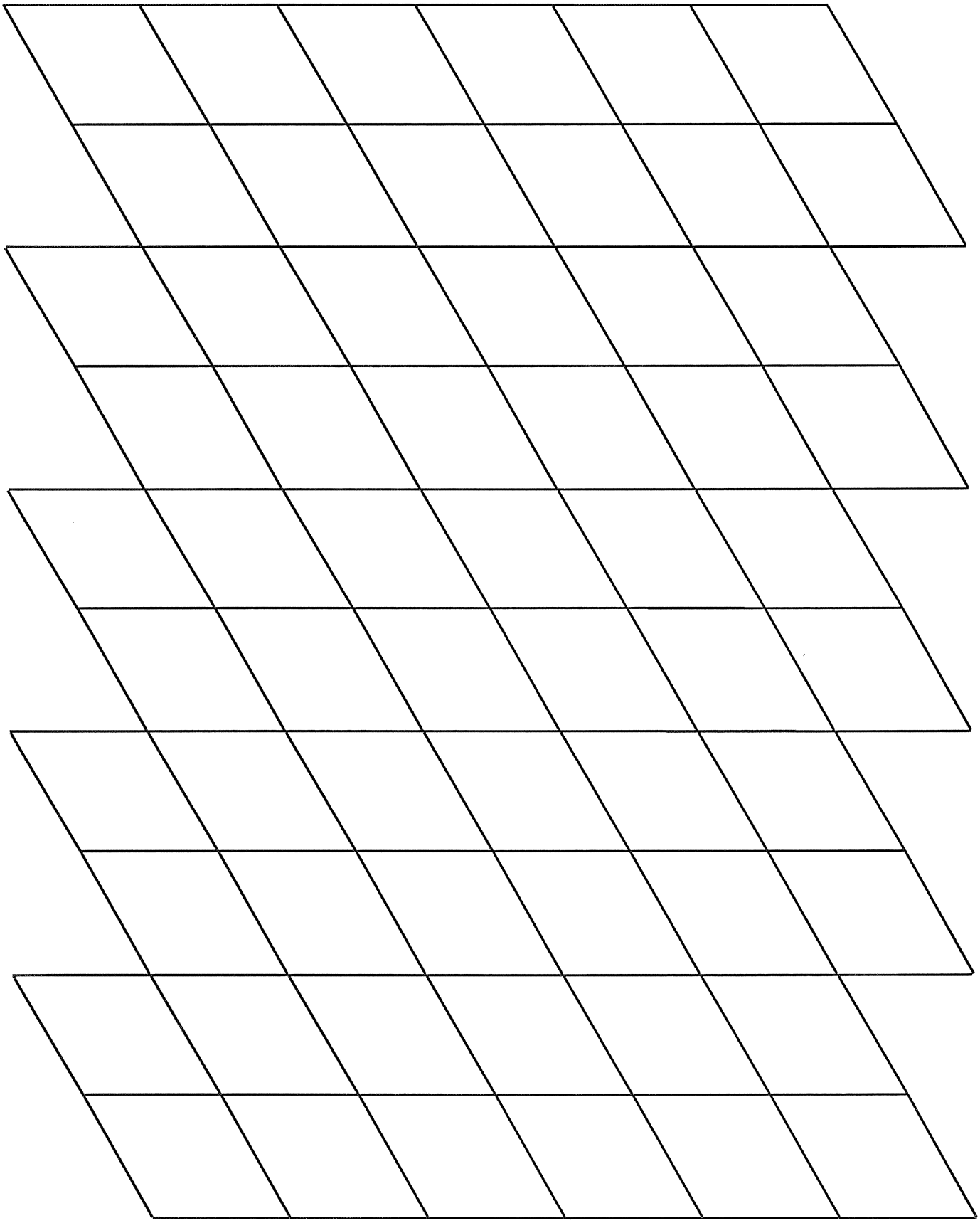
Pattern Block Shapes–run on red construction paper

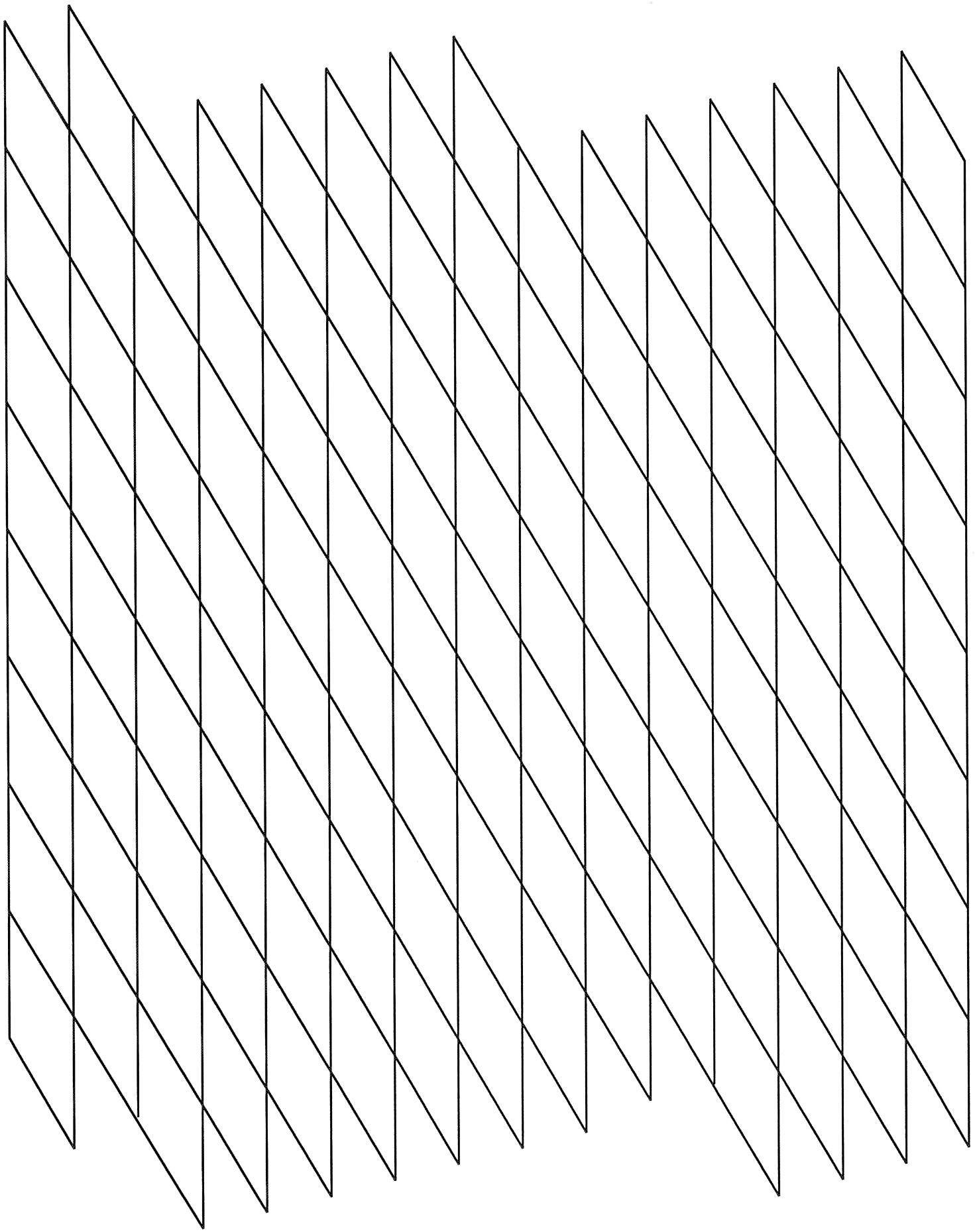


Pattern Block Shapes–run on green construction paper

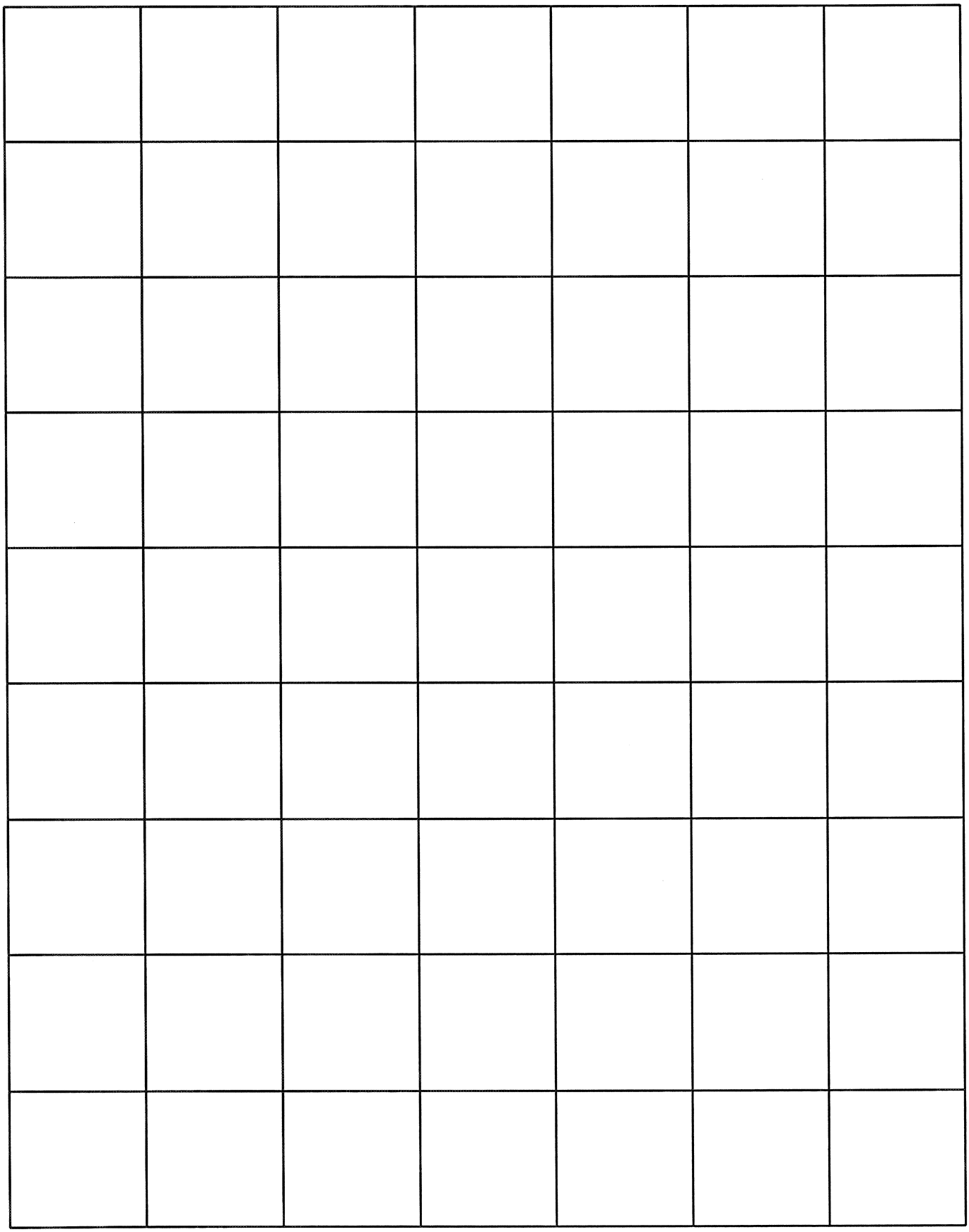


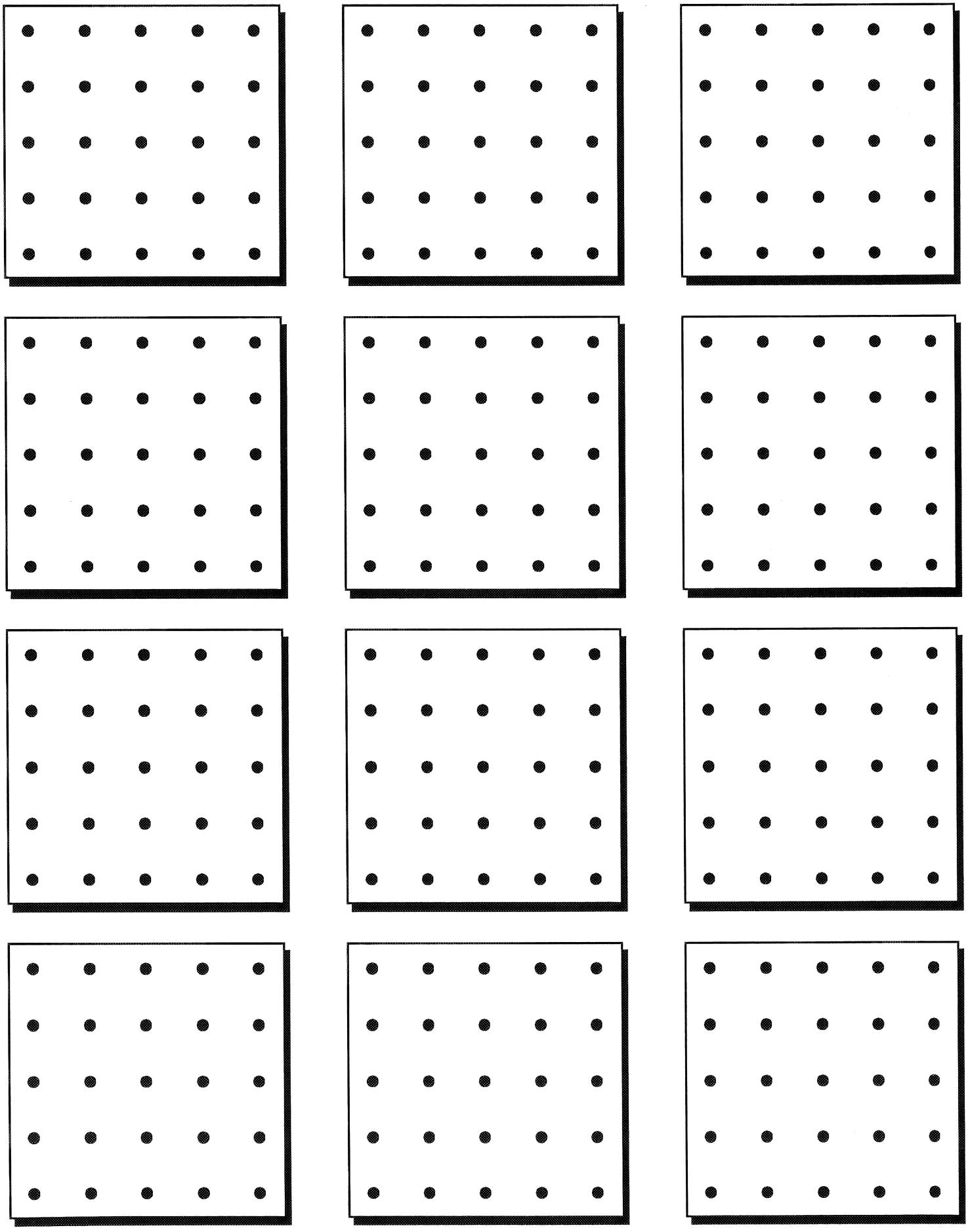
Pattern Block Shapes–run on blue construction paper

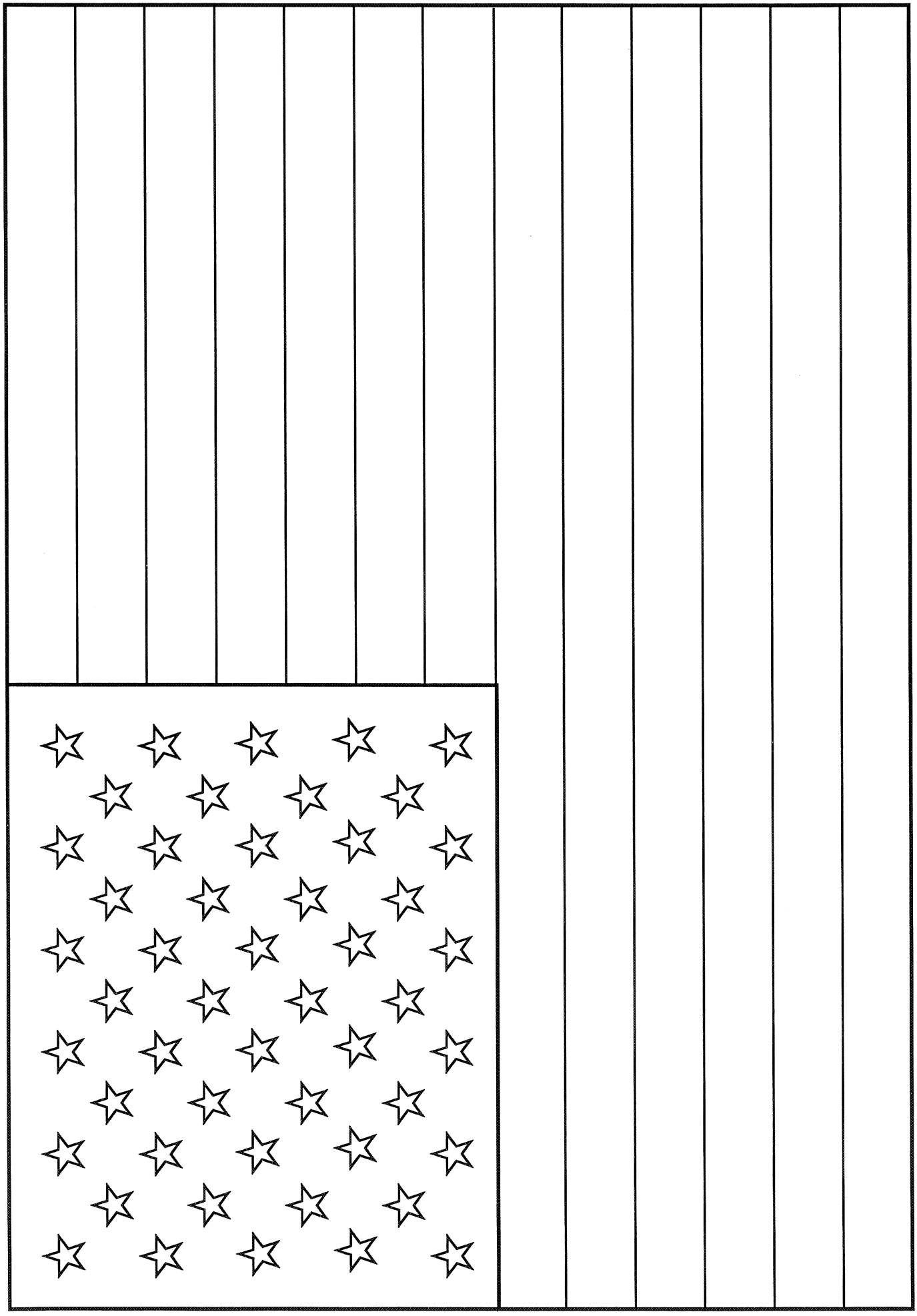


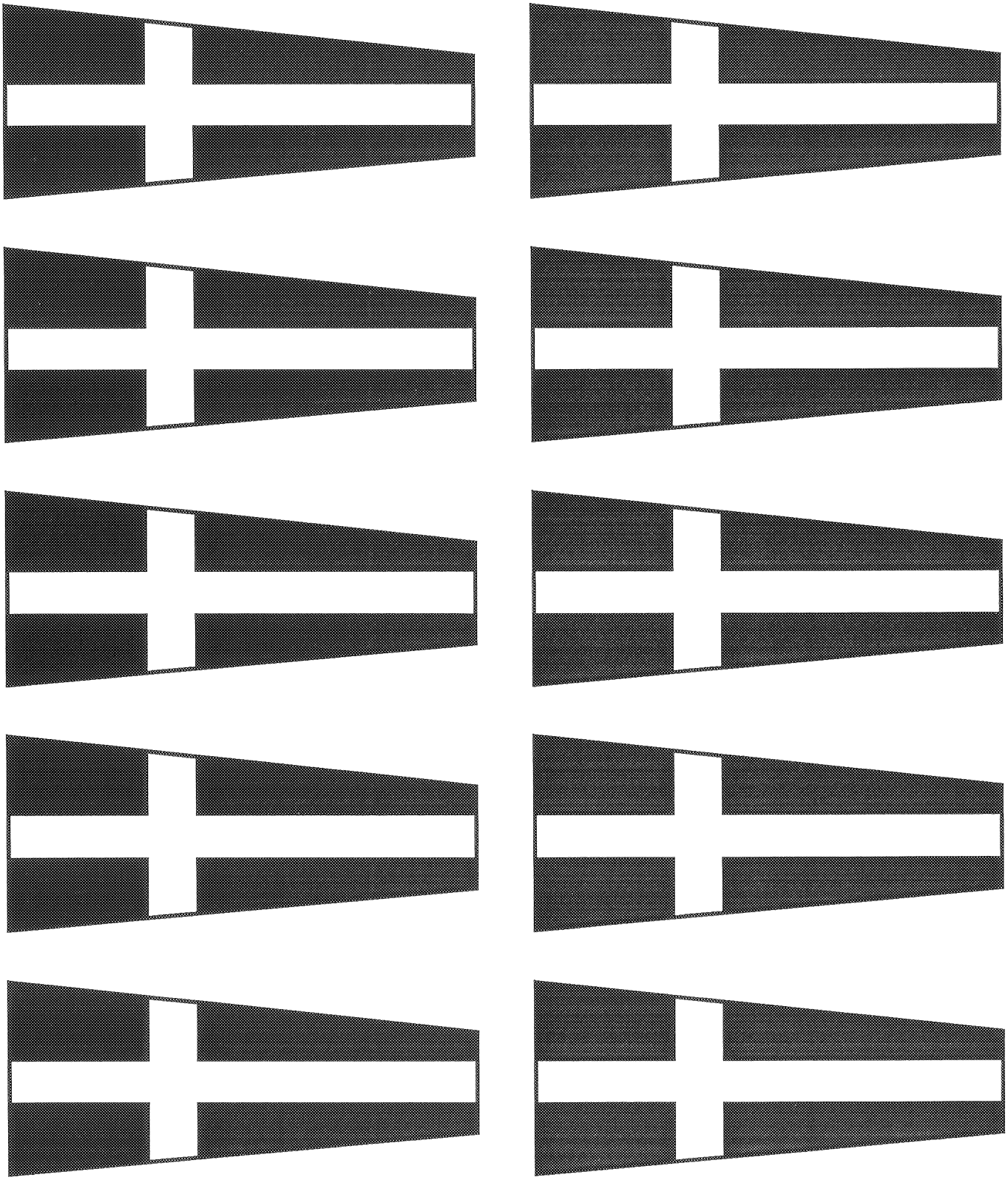


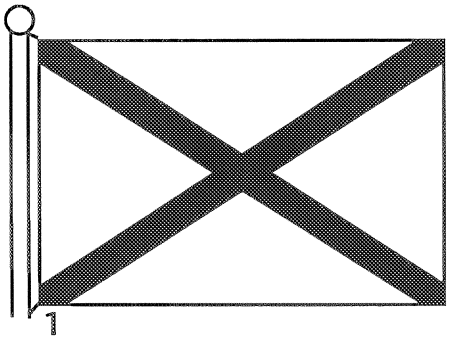
Pattern Block Shapes–run on orange construction paper







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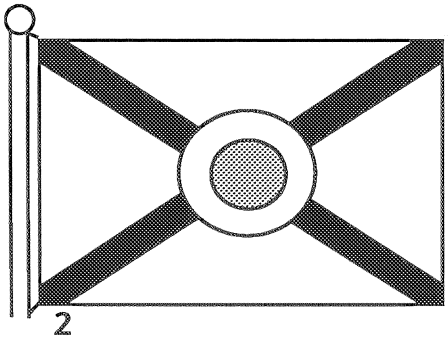
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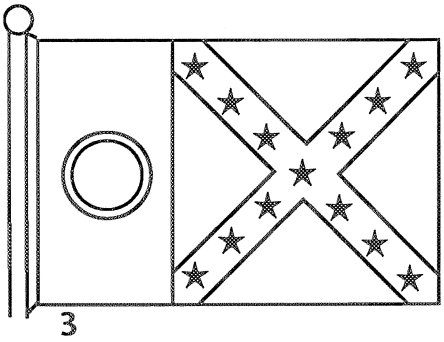
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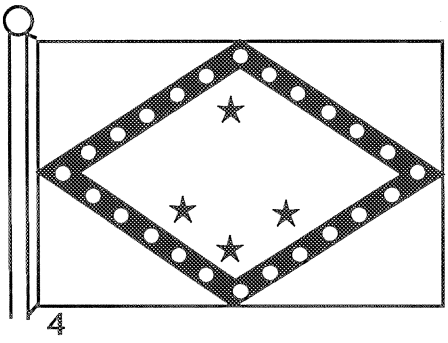
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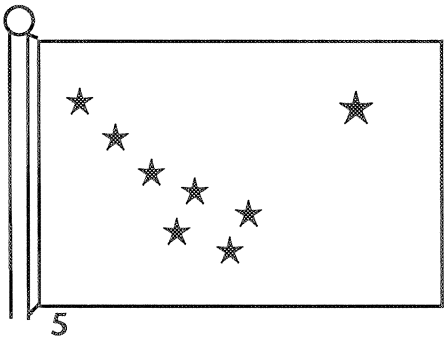
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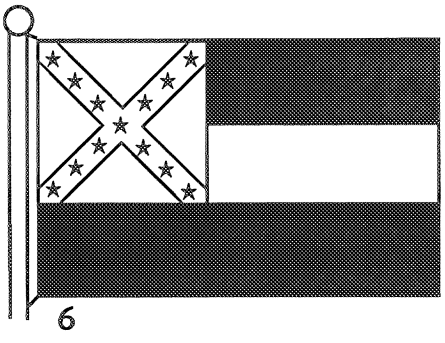
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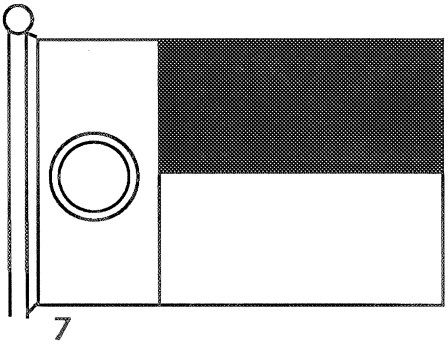
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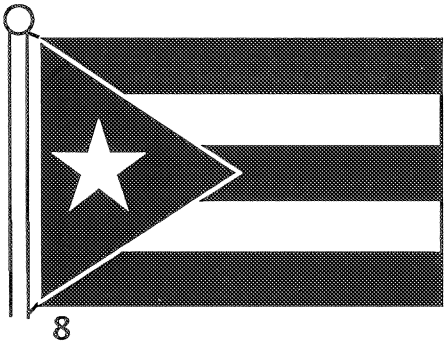
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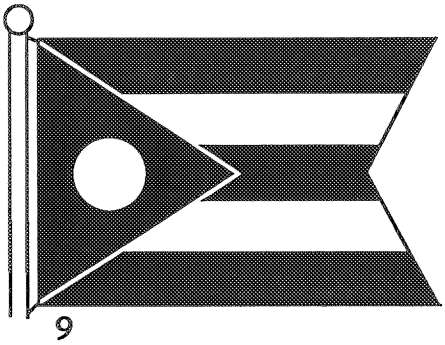
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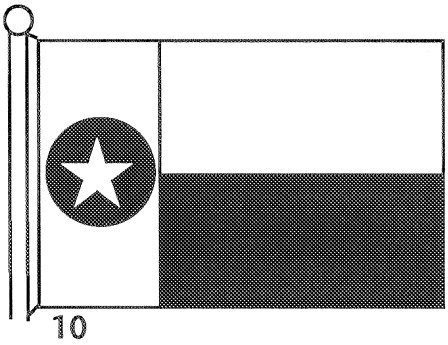
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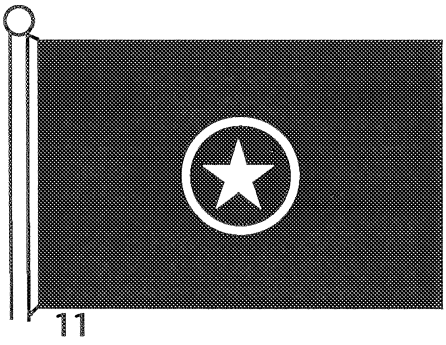
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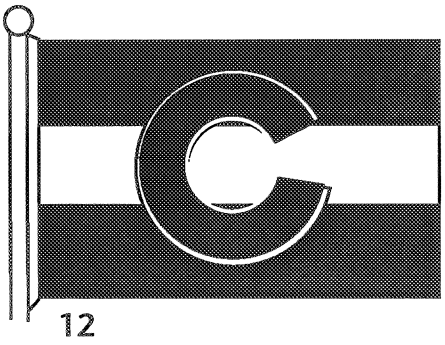
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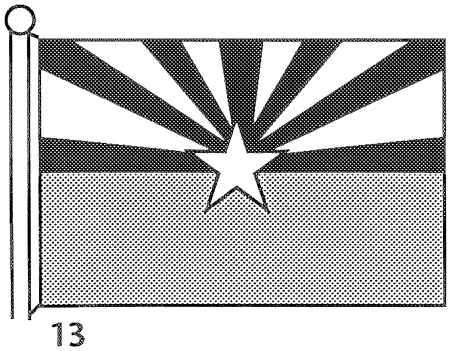
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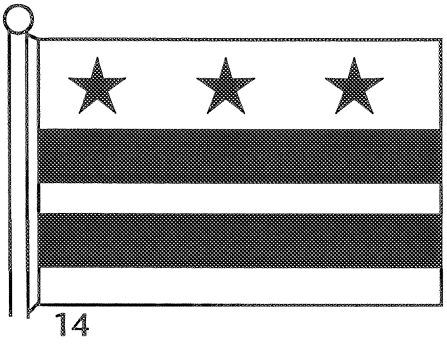
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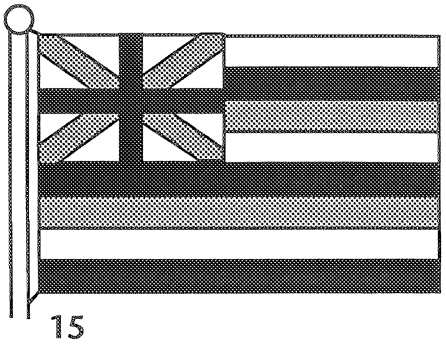
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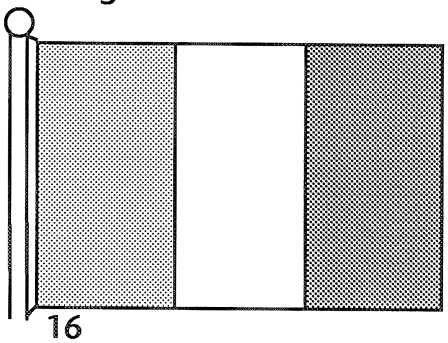

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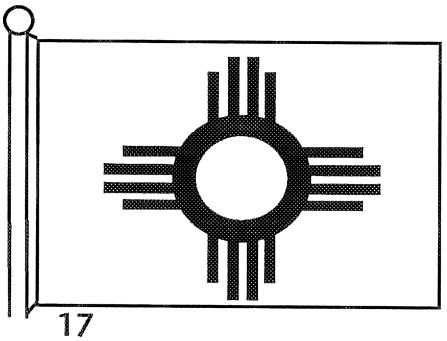

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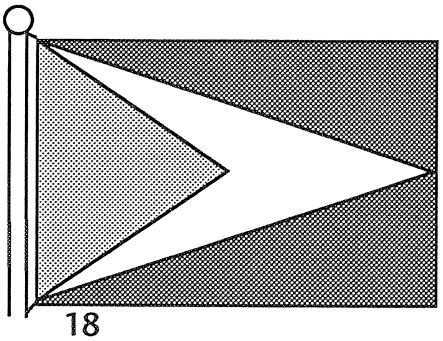

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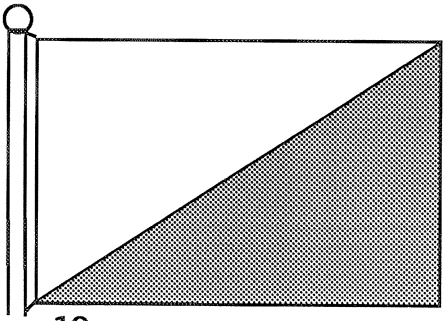

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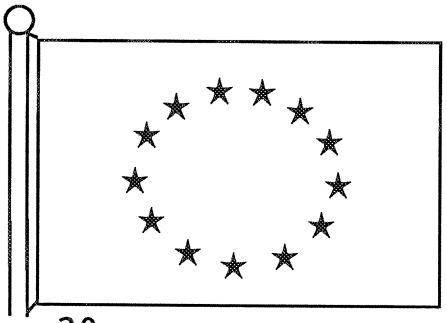

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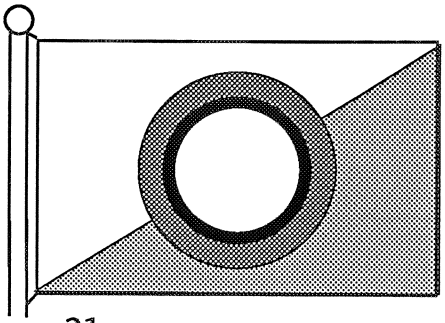

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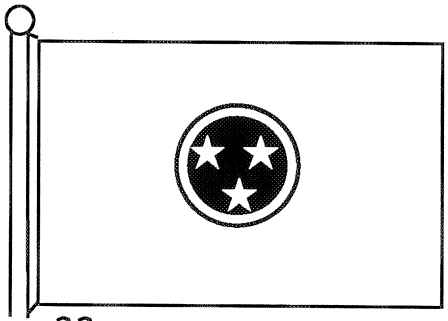

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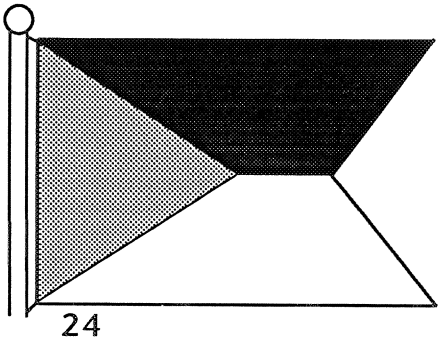

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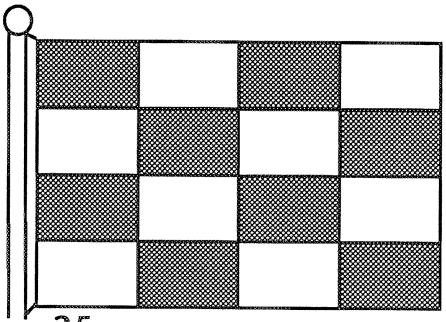

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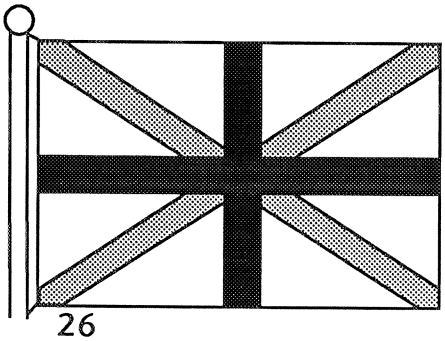

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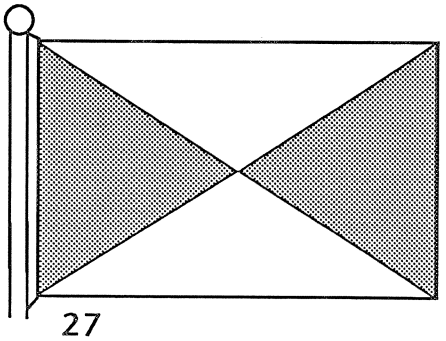

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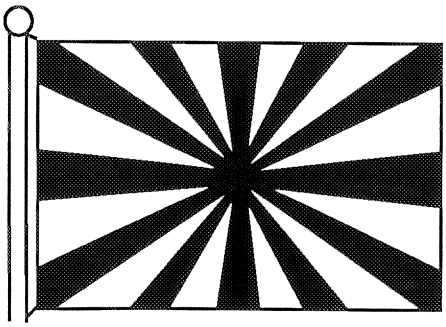

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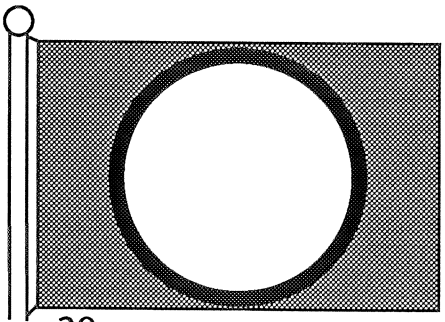

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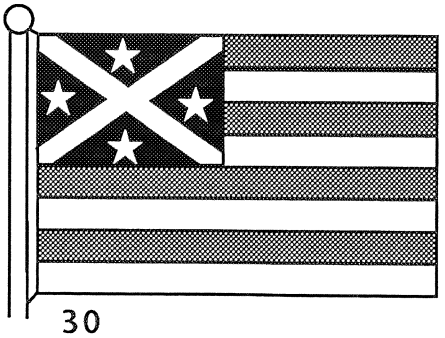

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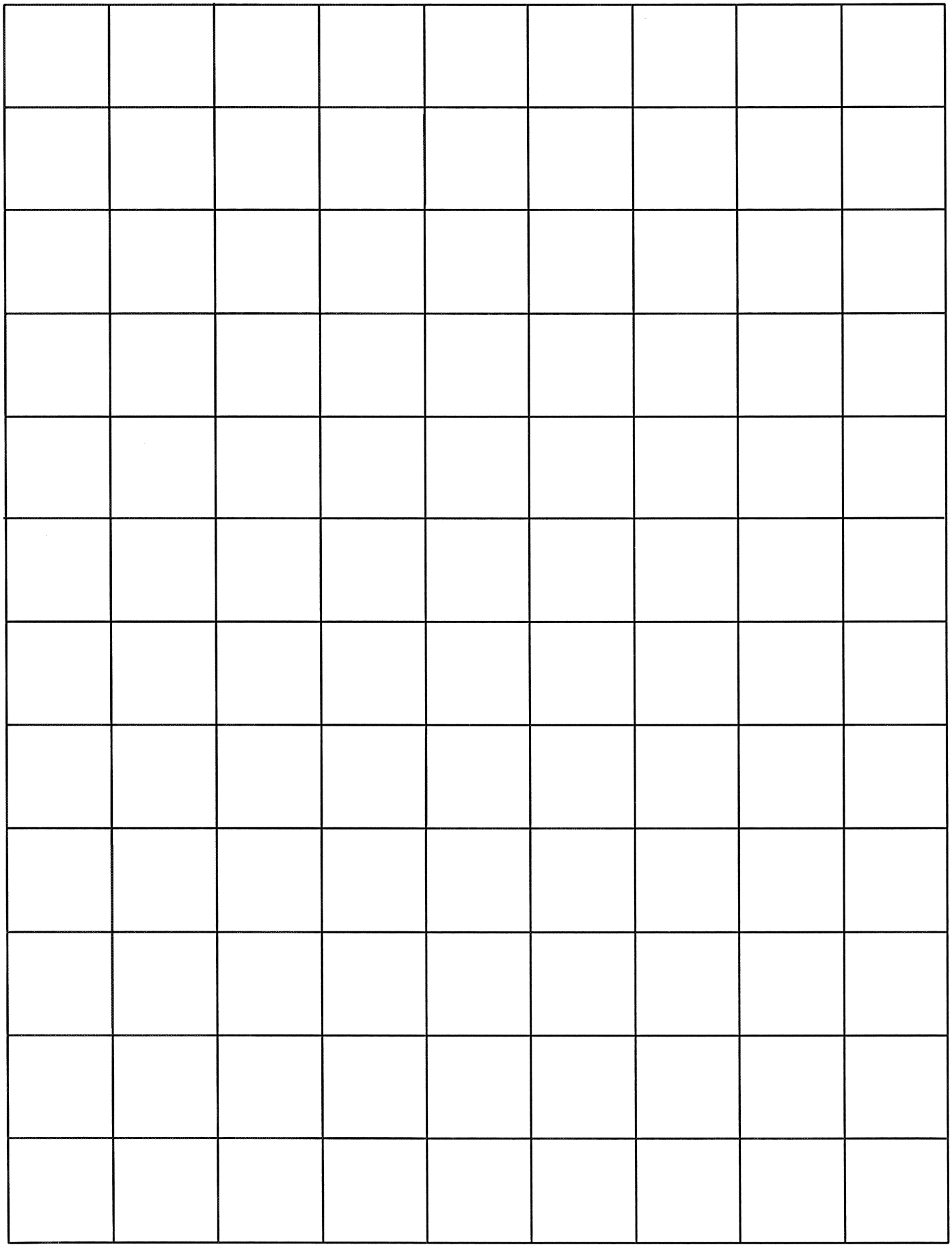


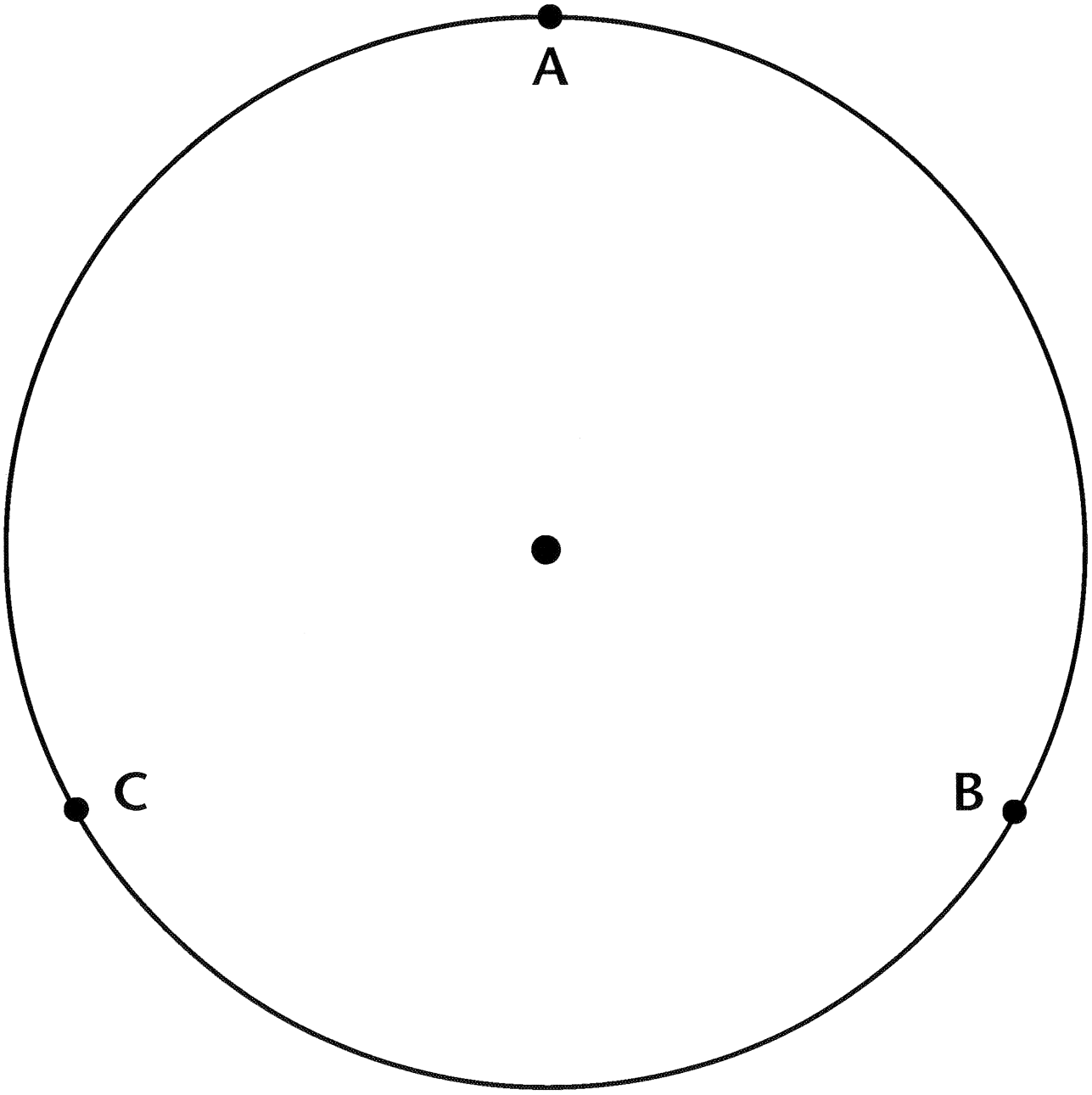
Name_____

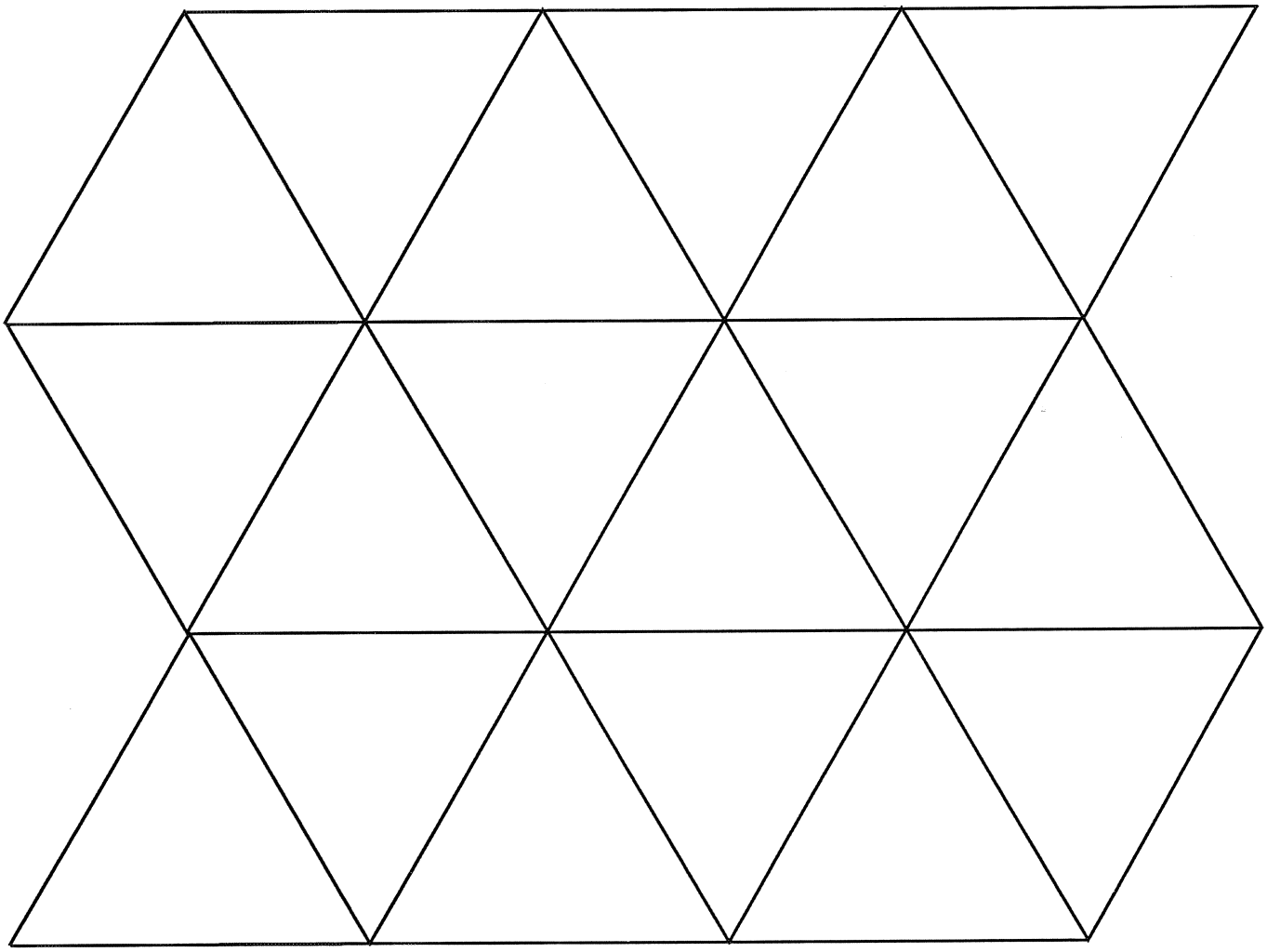
★ Flag Probability ★

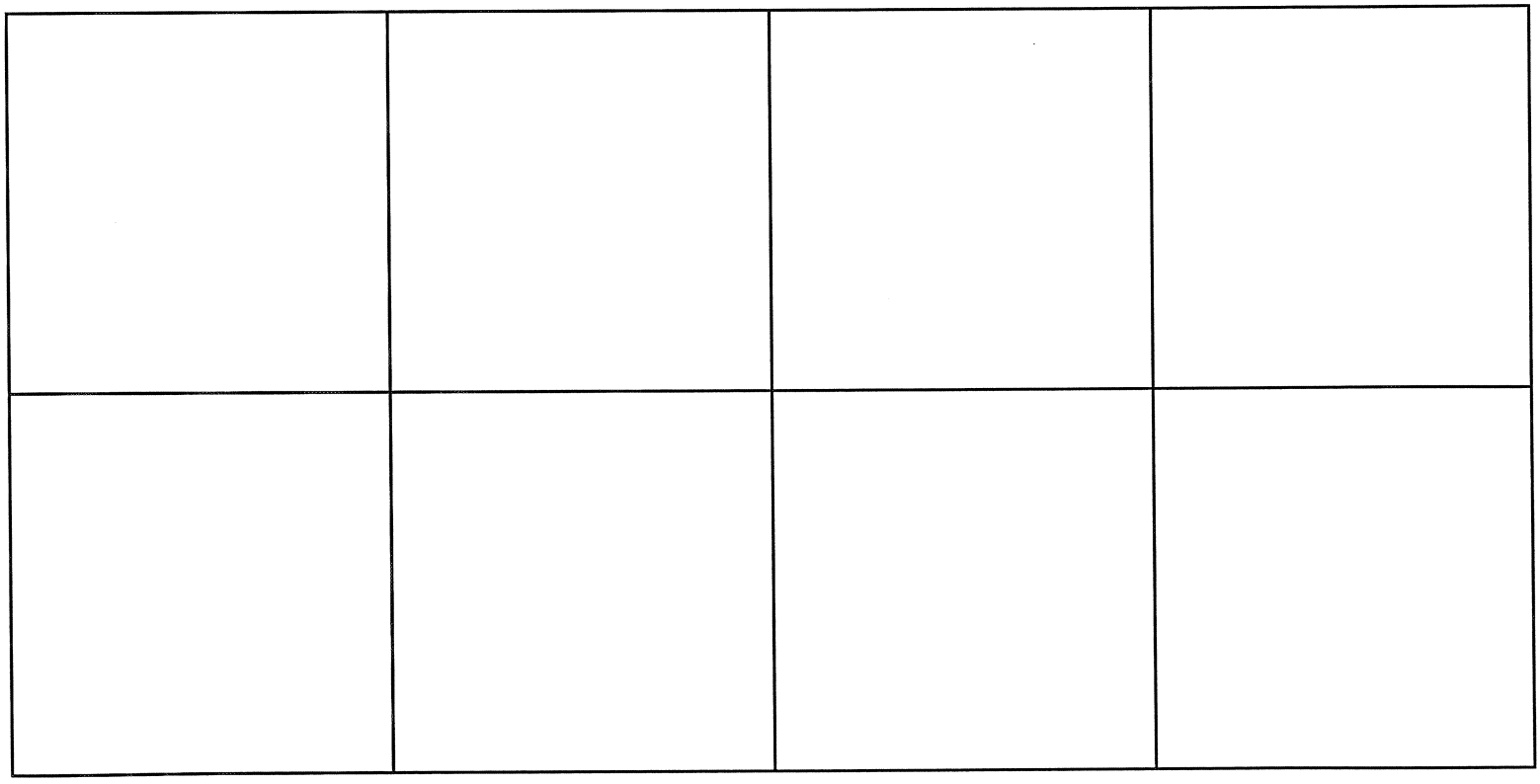
Prediction:

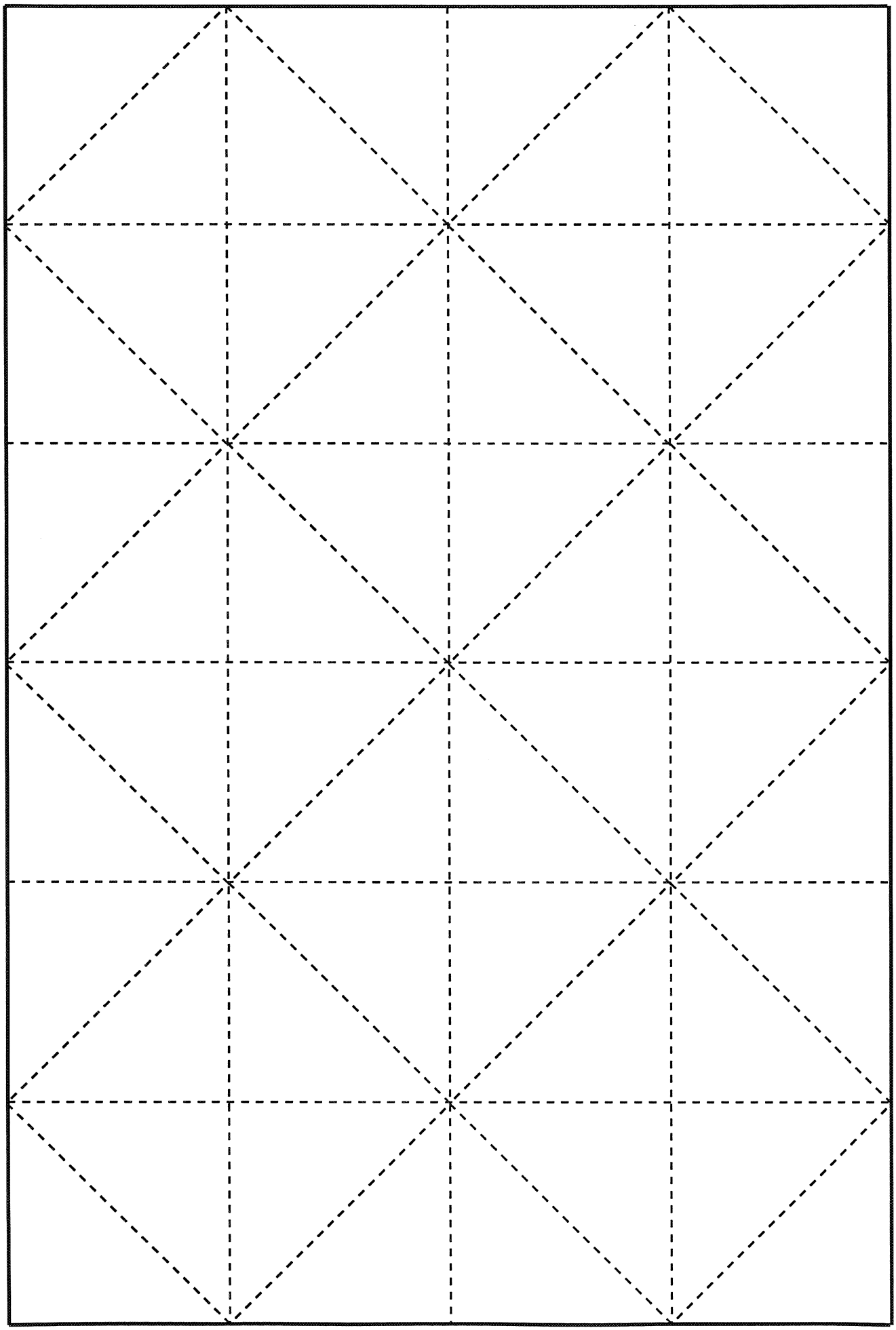
Prediction:

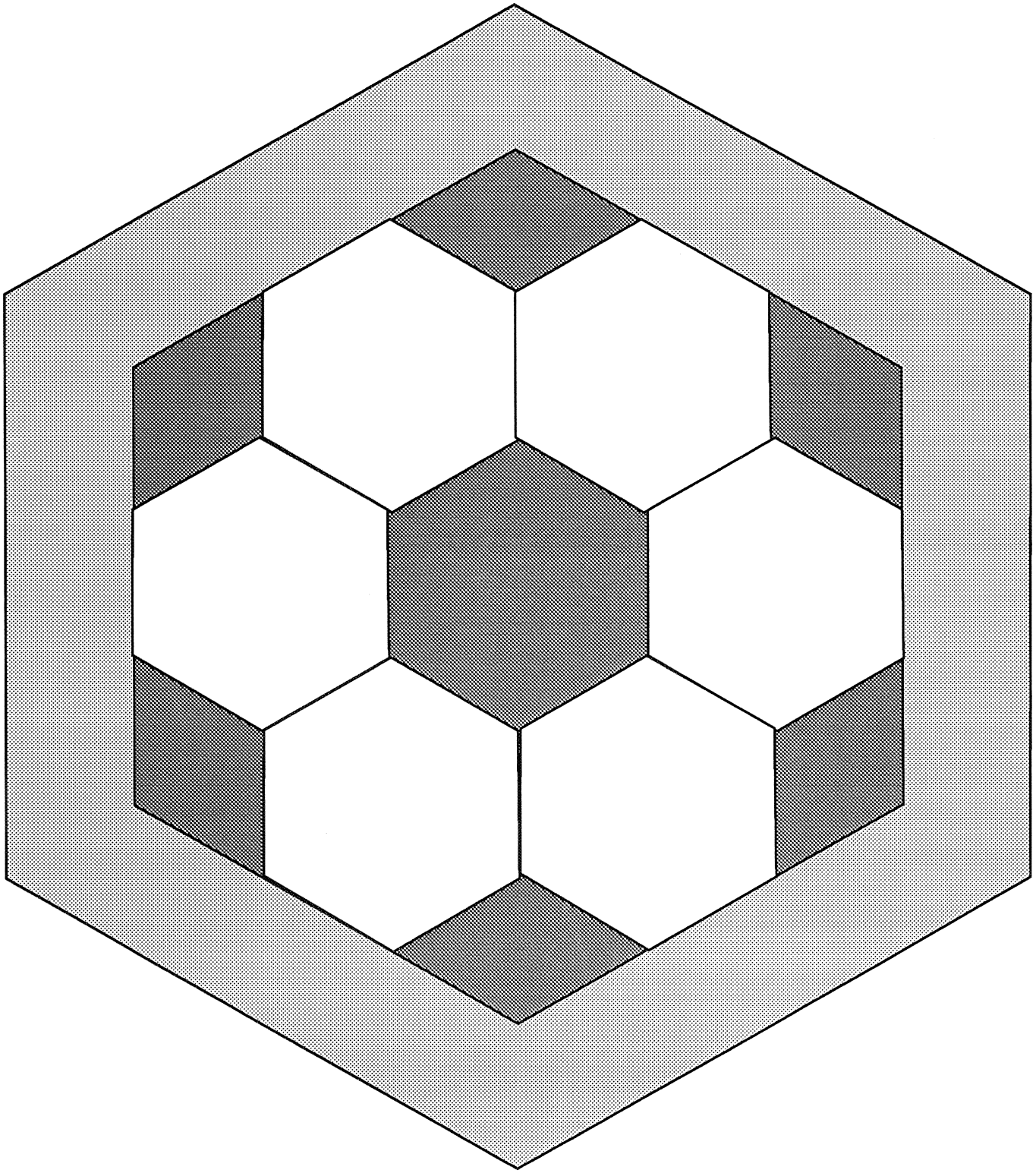
Circles Only	Stars Only	Circles and Stars	No Circles and No Stars

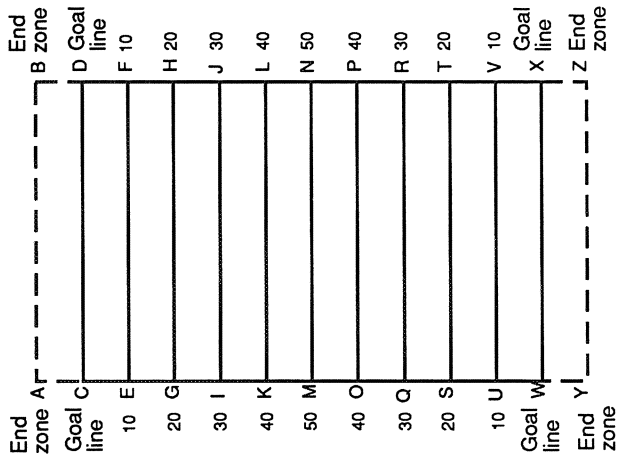

A
B
C







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C D
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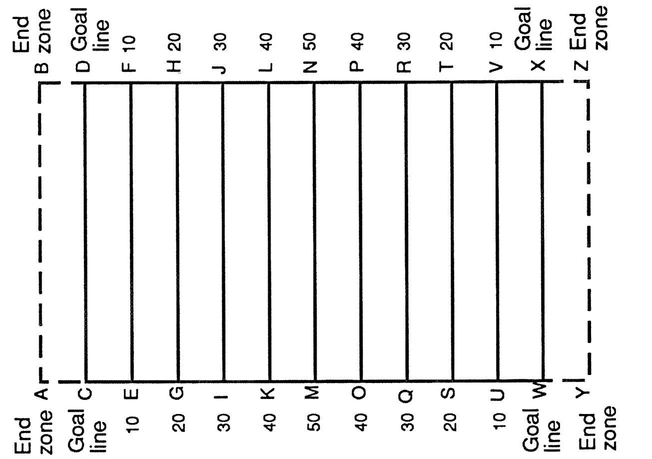
10 U V 10
Goal line
W X
Y Z
End zone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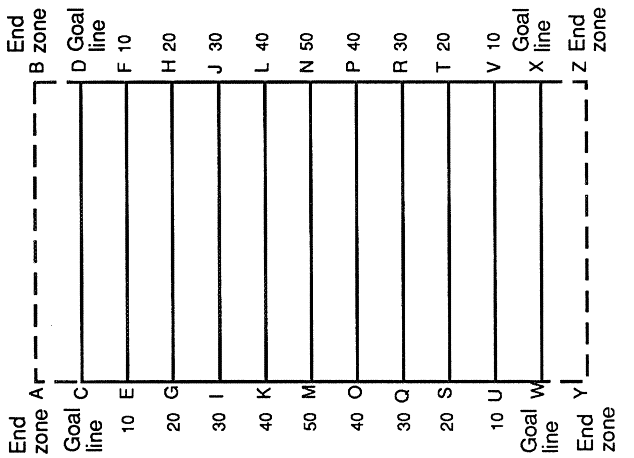
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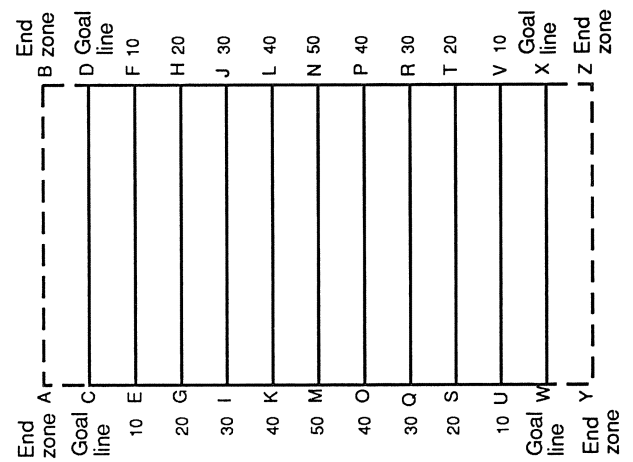
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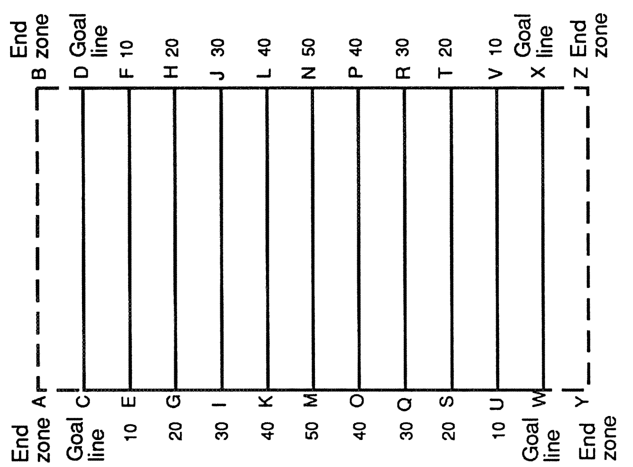
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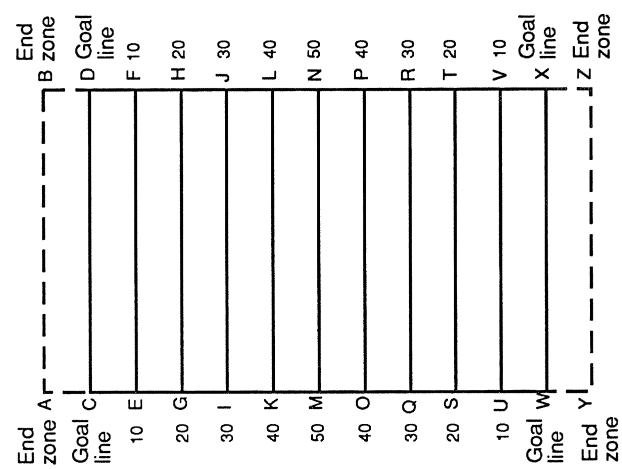
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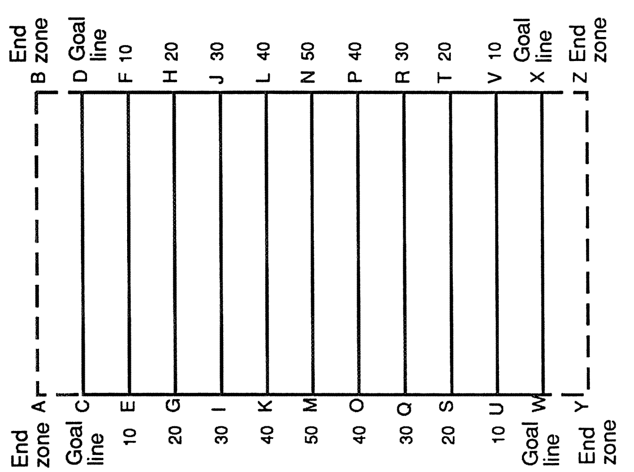
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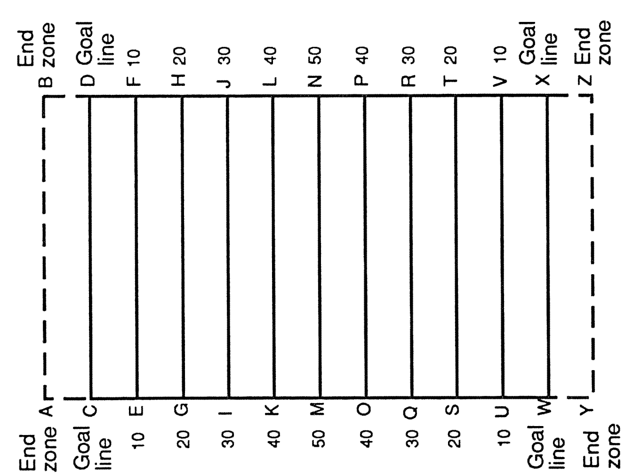
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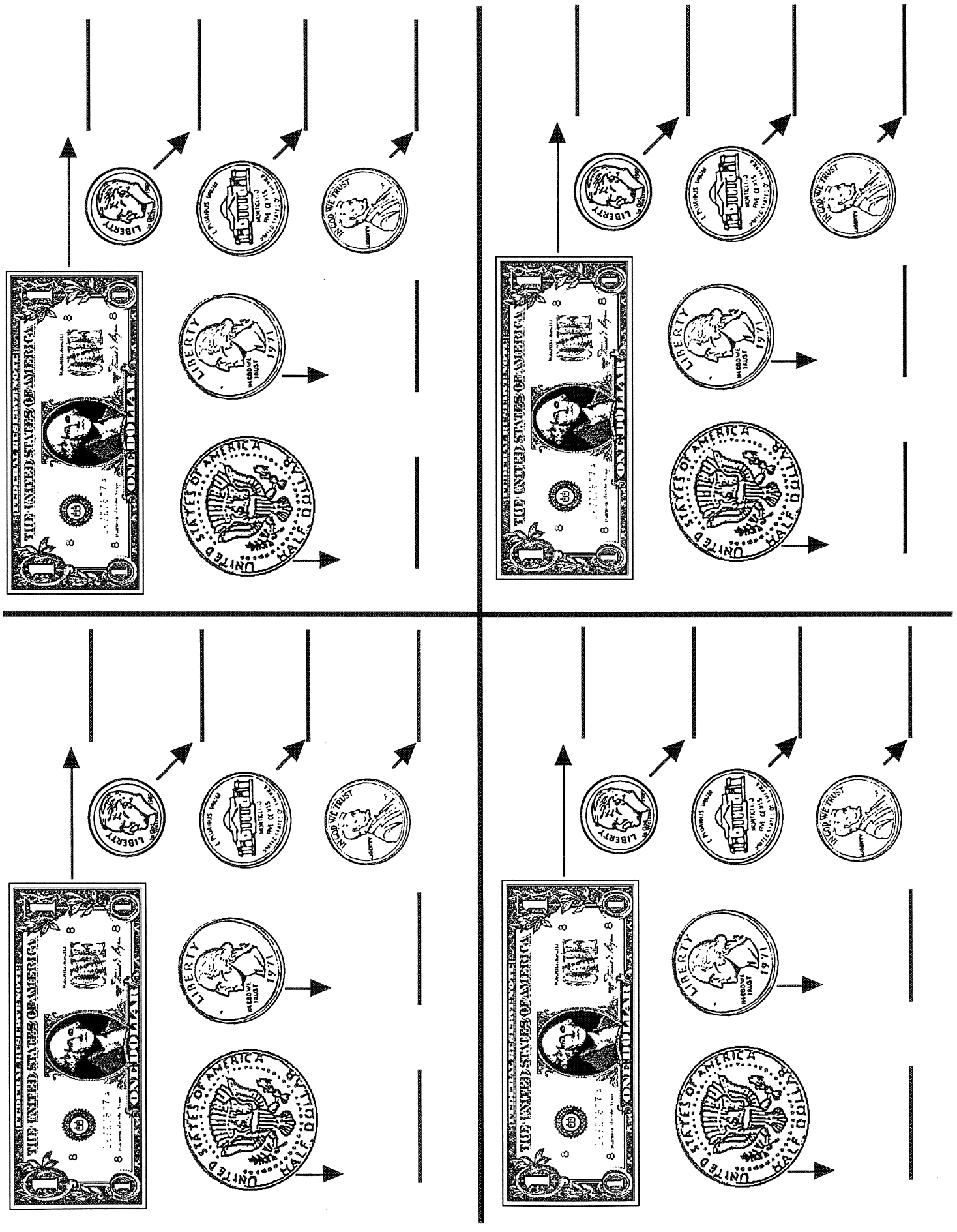

THE UNITED STATES OF AMERICA
ONE DOLLAR
LIBERTY
IN GOD WE TRUST
LIBERTY 1971
IN GOD WE TRUST
UNITED STATES OF AMERICA
HALF DOLLAR

Name _____ Date _____

Describe the activity and its purpose.

Describe your plan.

What do you predict will happen?

What happened?

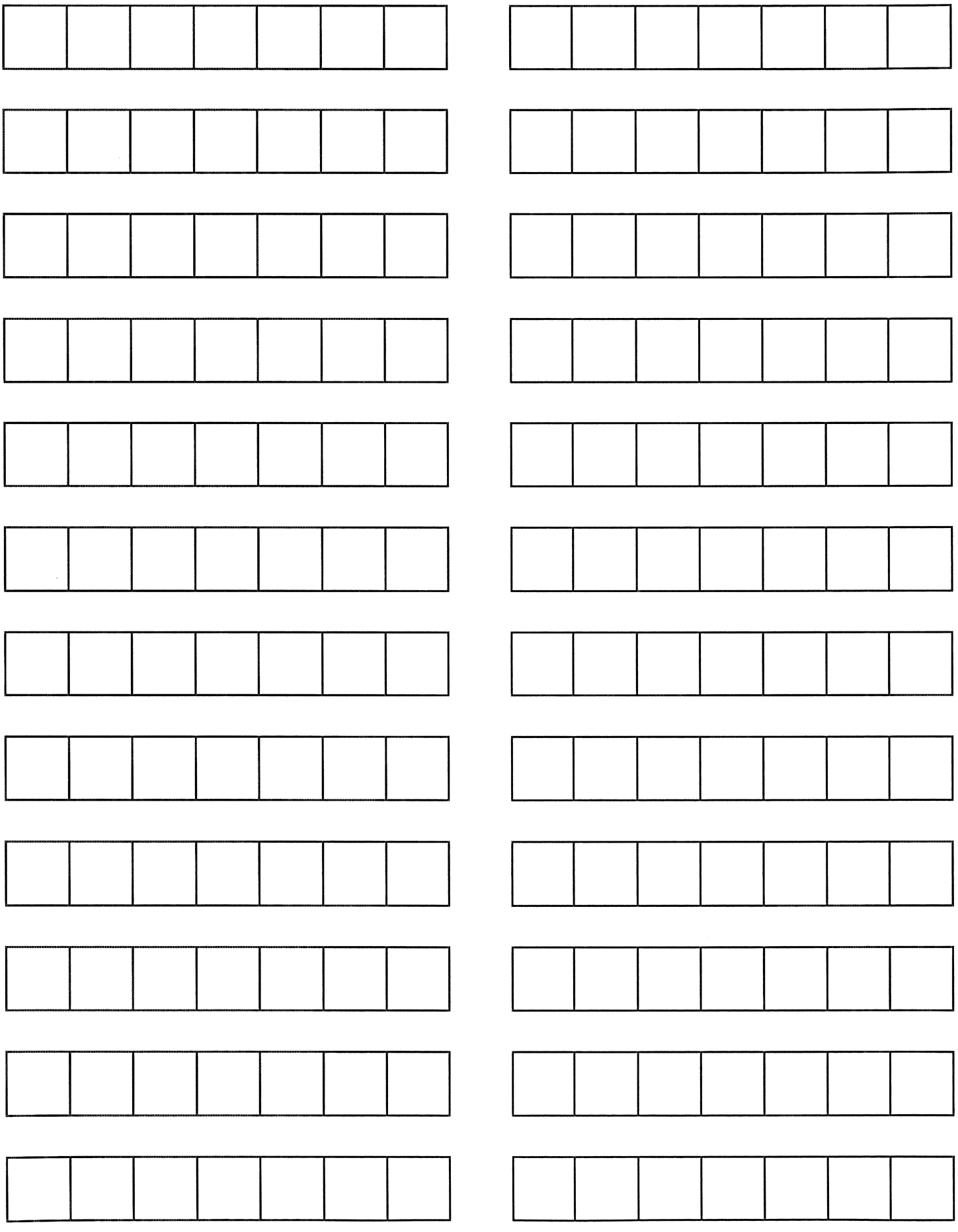
What did you learn?

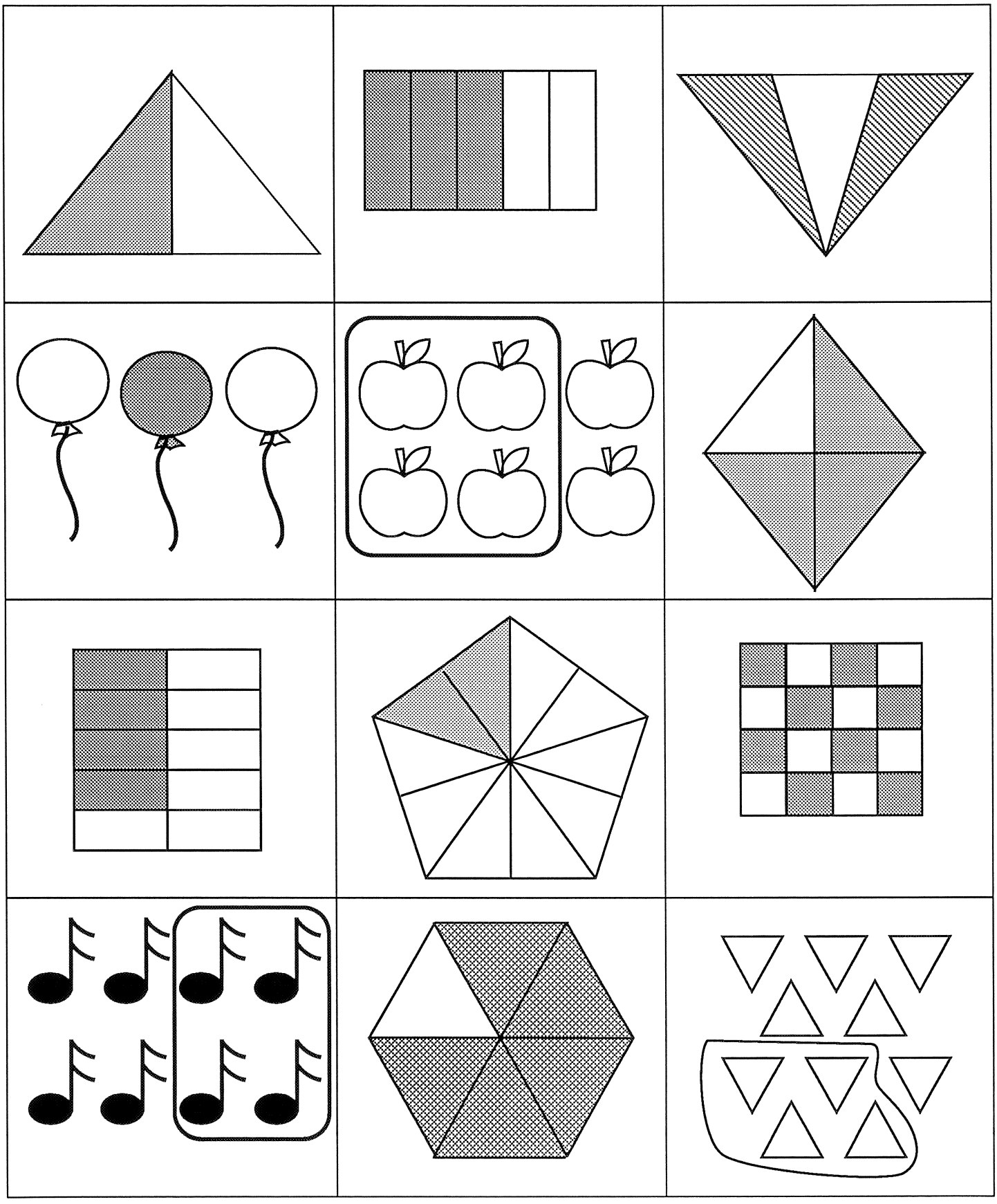
On the back of this paper, list other things you would like to know.

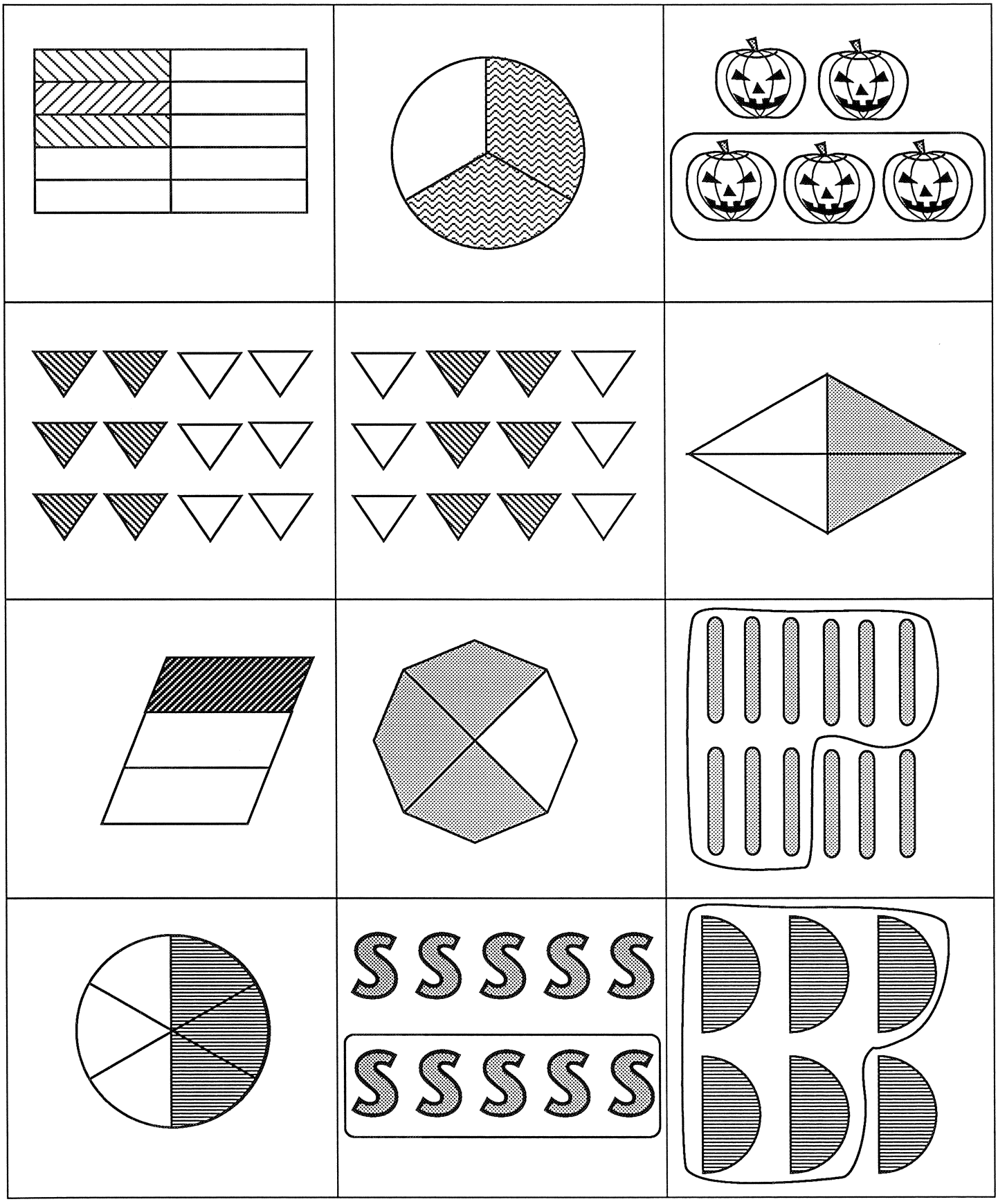
Opening Eyes to Mathematics
Paper Chain Problem Solving

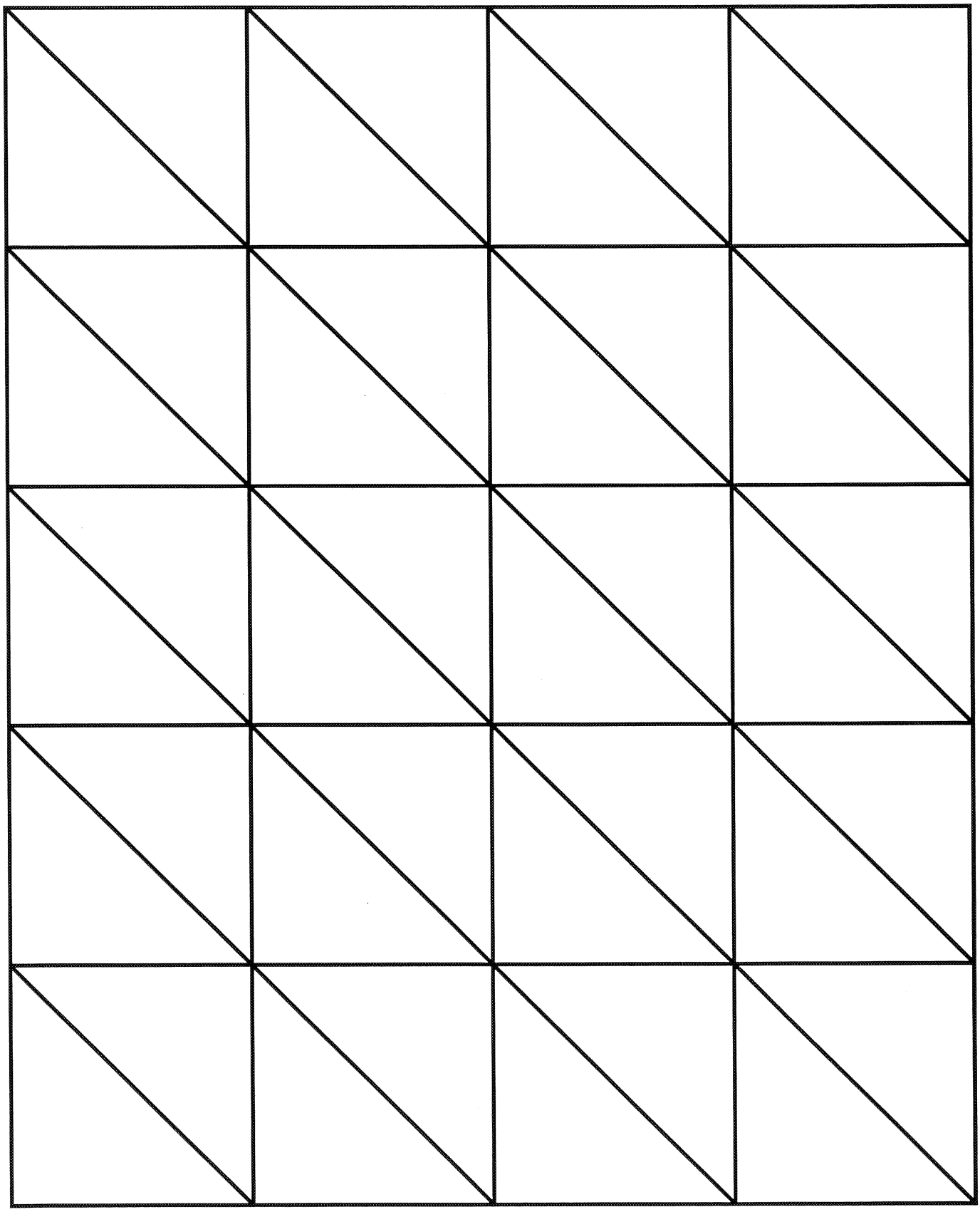
Blackline-82

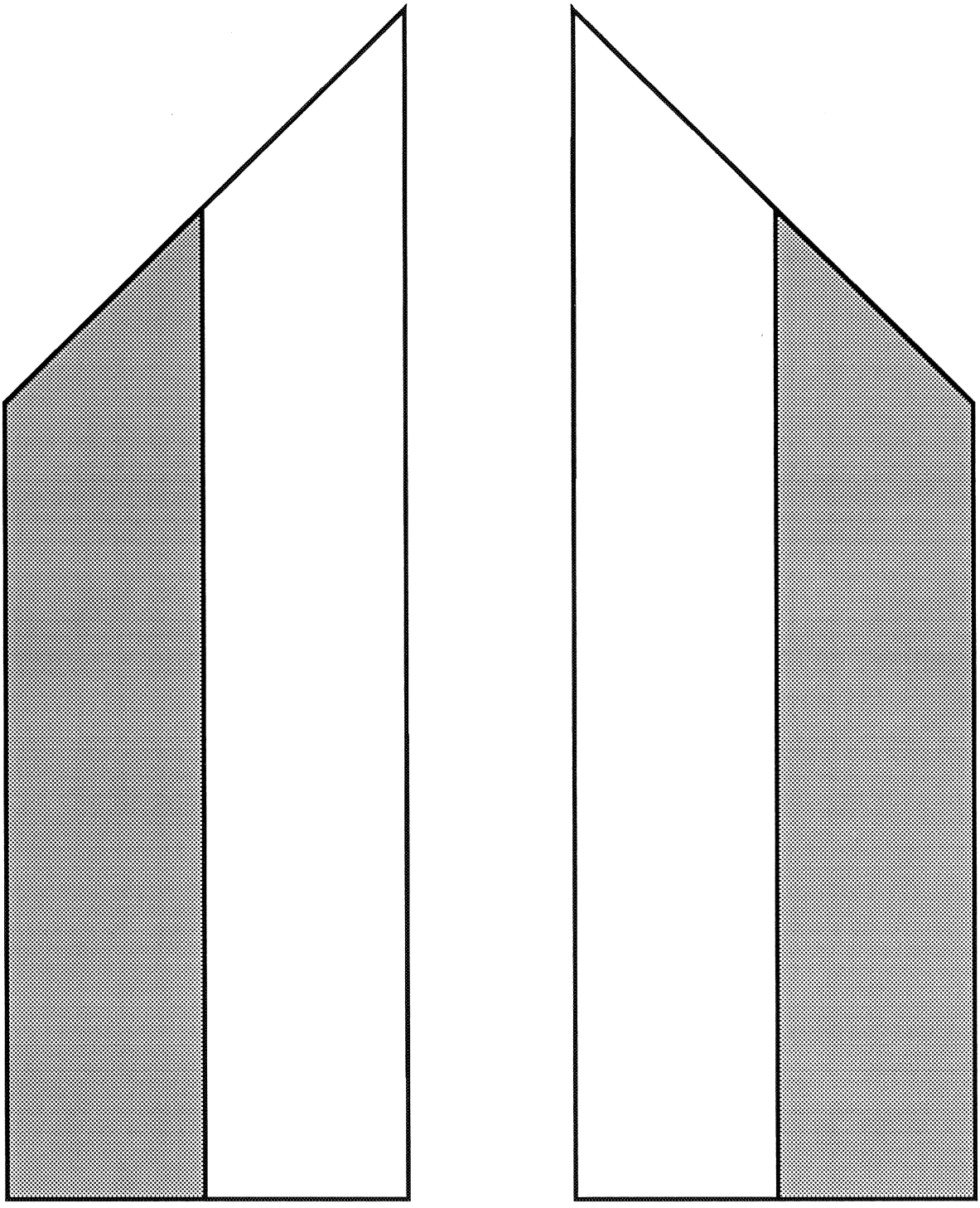
Name_____

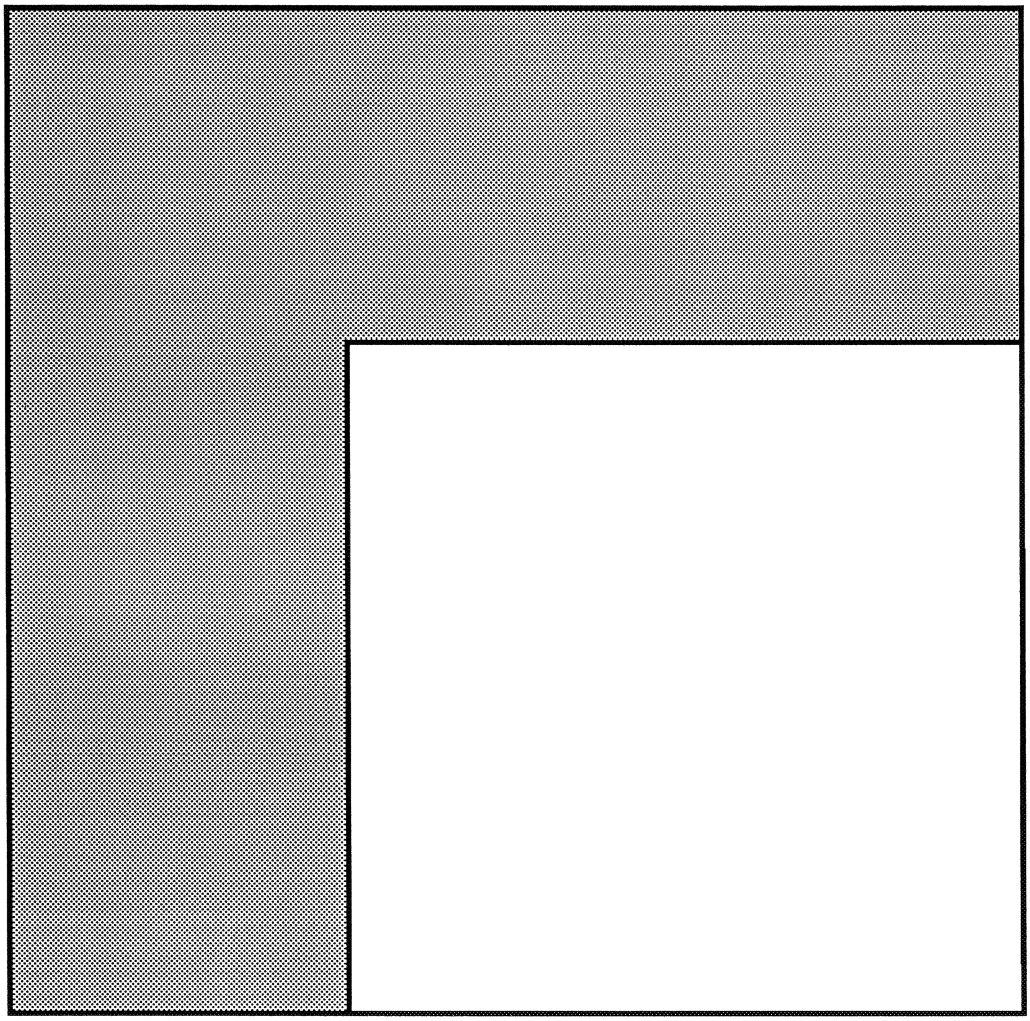












Name _____

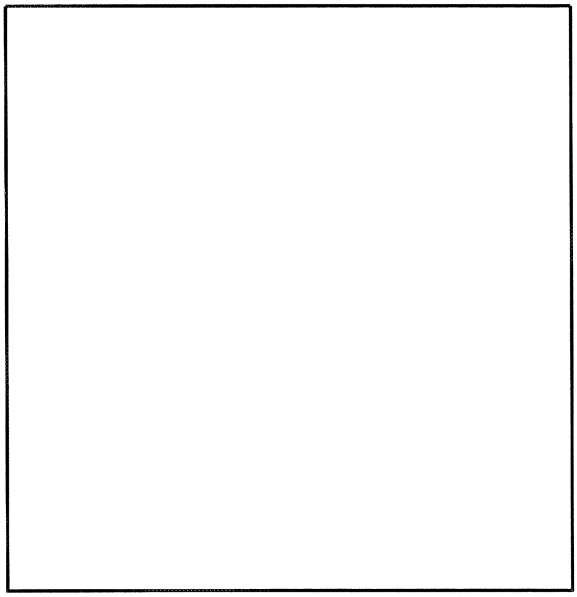
GUESS AND CHECK

Item	Unit of Measure	Guess	Check

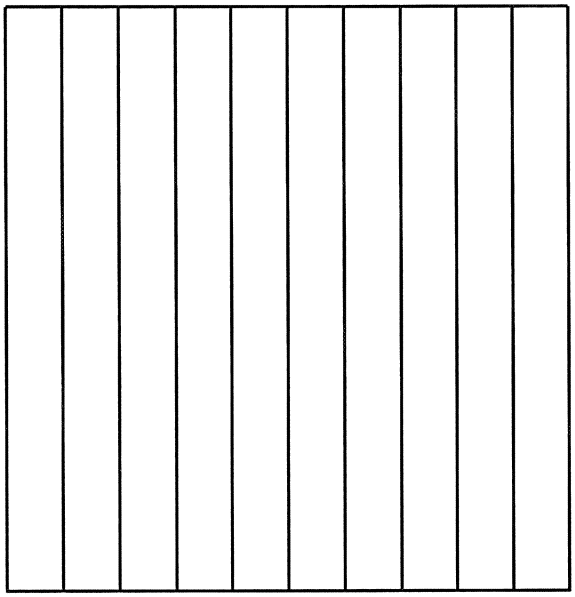
Name _____

GUESS AND CHECK

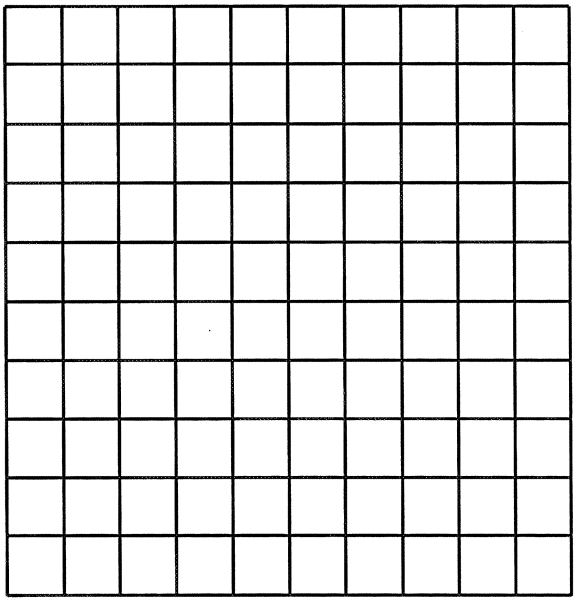
Item	Unit of Measure	Guess	Check



magnified unit

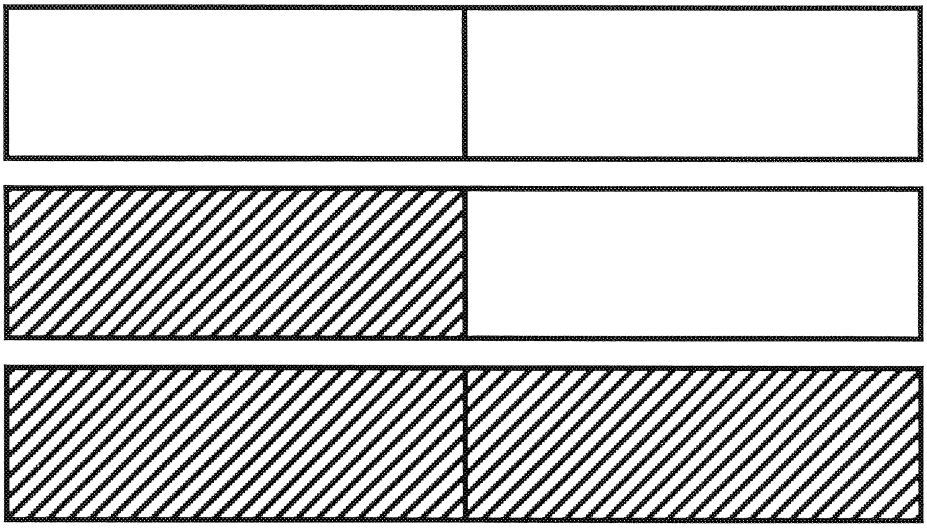


magnified unit showing tenths

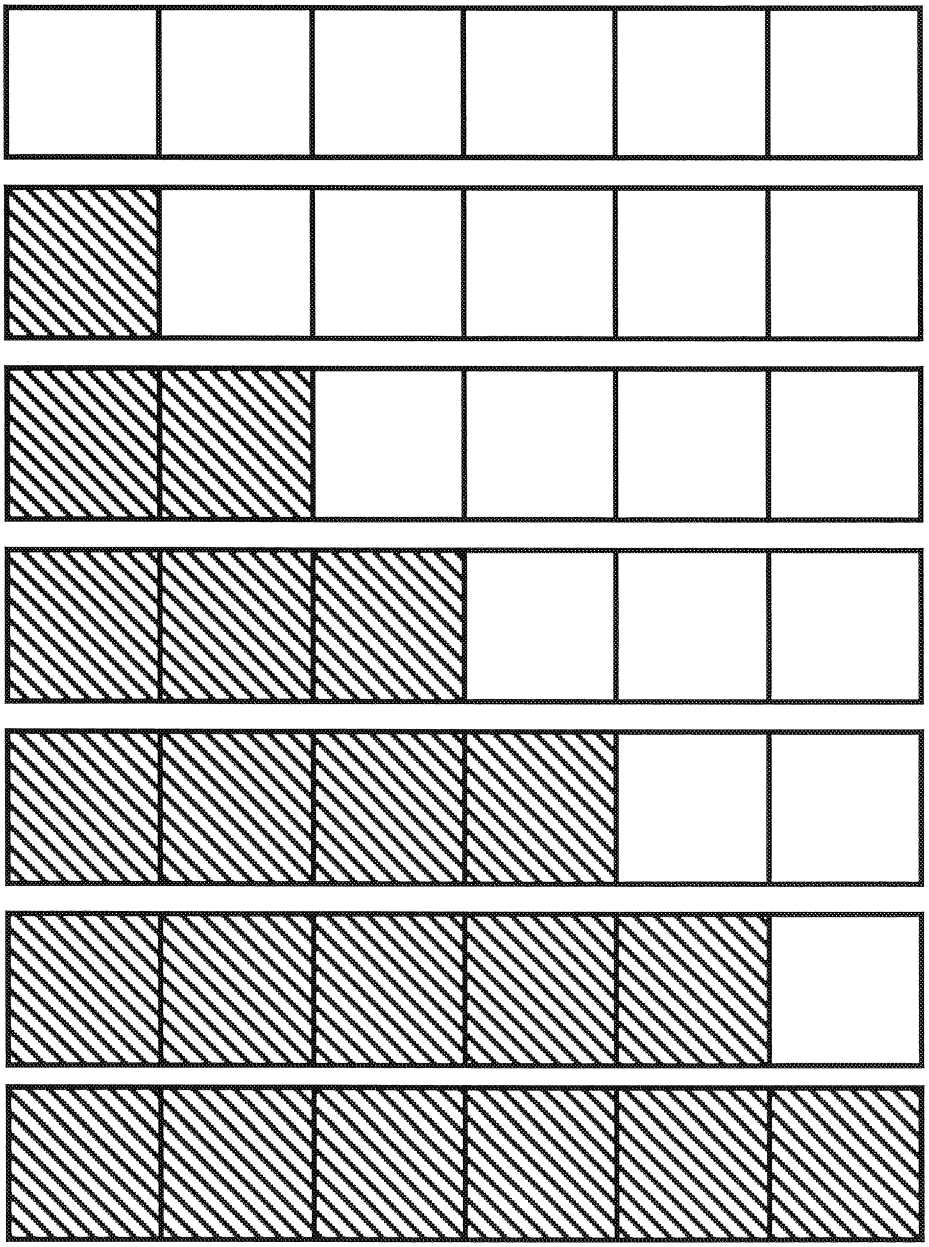


magnified unit showing hundredths

Fraction Bars®* for Halves and Sixths



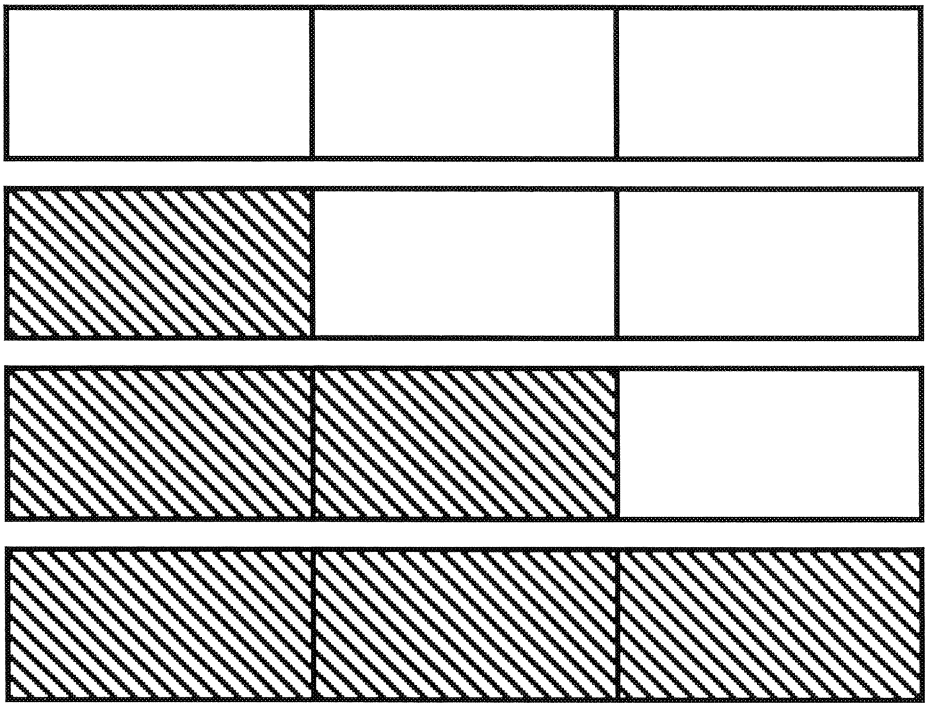
Run halves on green paper.



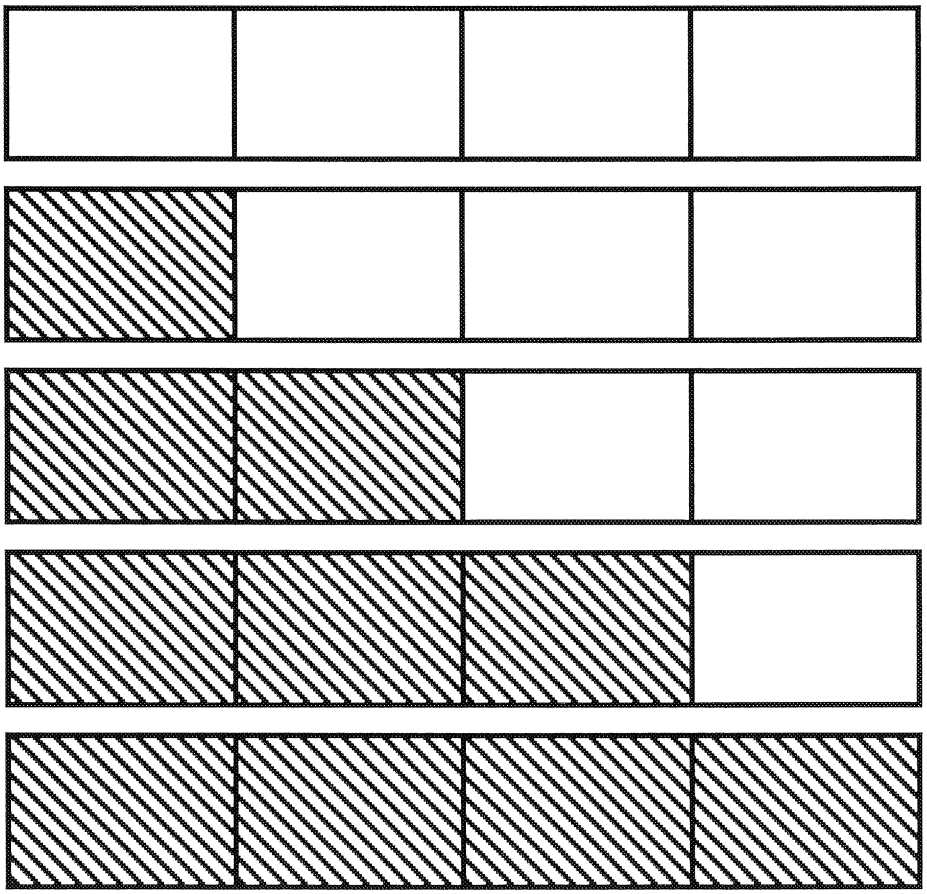
Run sixths on red paper.

*Fraction Bars® is a registered trademark of Scott Resources, Inc.

Fraction Bars®* for Thirds and Fourths



Run thirds on yellow paper.



Run fourths on blue paper.

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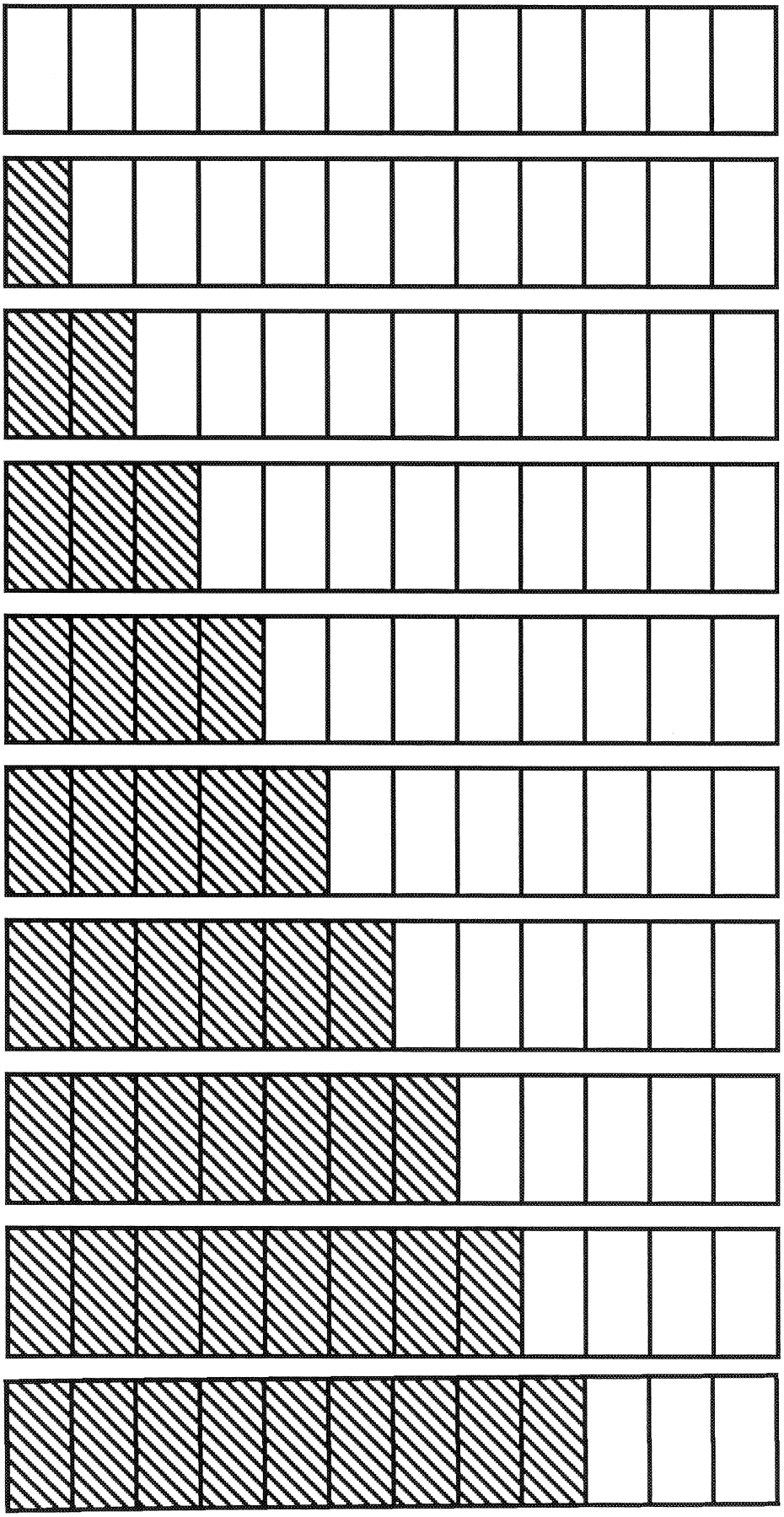
Fraction Bars®* for Twelfths



Run twelfths on orange paper.

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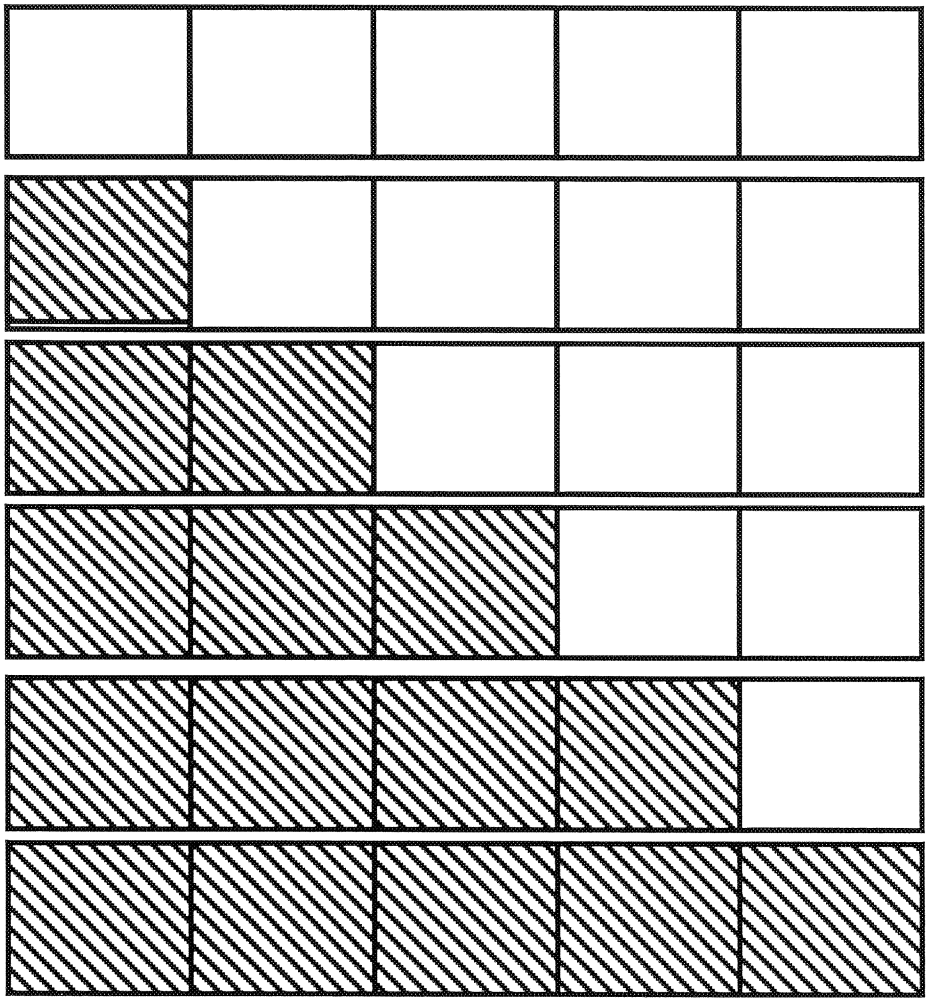
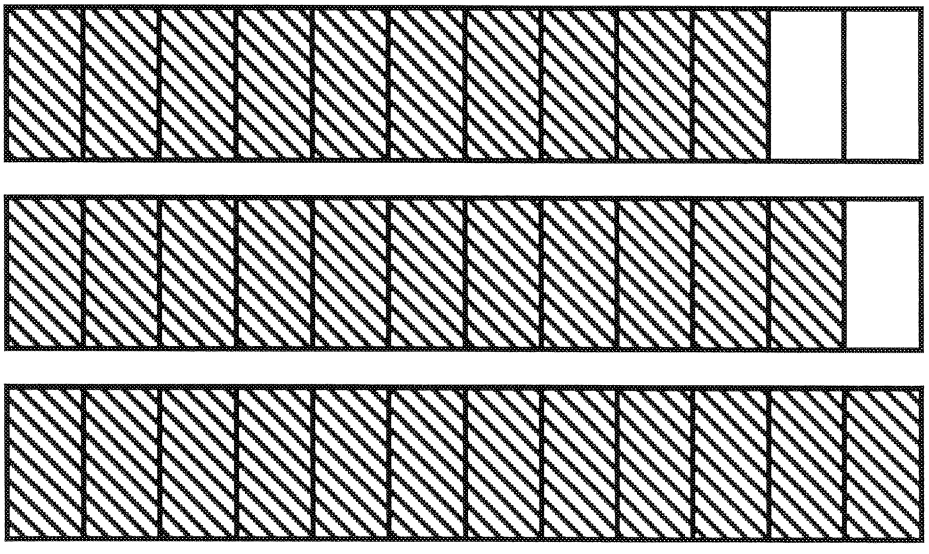
Fraction Bars®* for Fifths



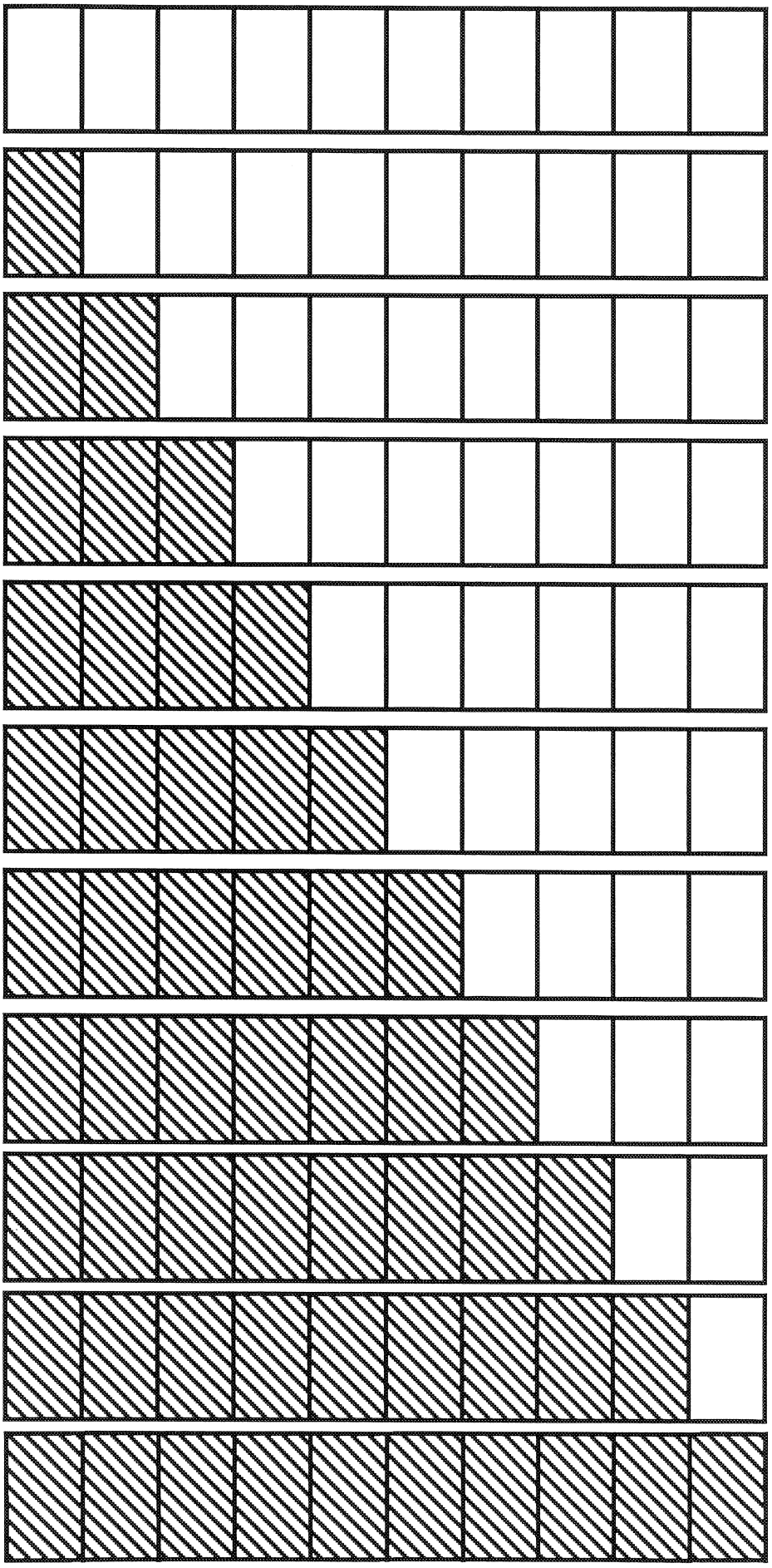
Run fifths on purple paper.

WARNING: Distortion will occur if bars are run horizontally as well as vertically on a page. Bars will be diffierent lengths.



Run twelfths on orange paper.

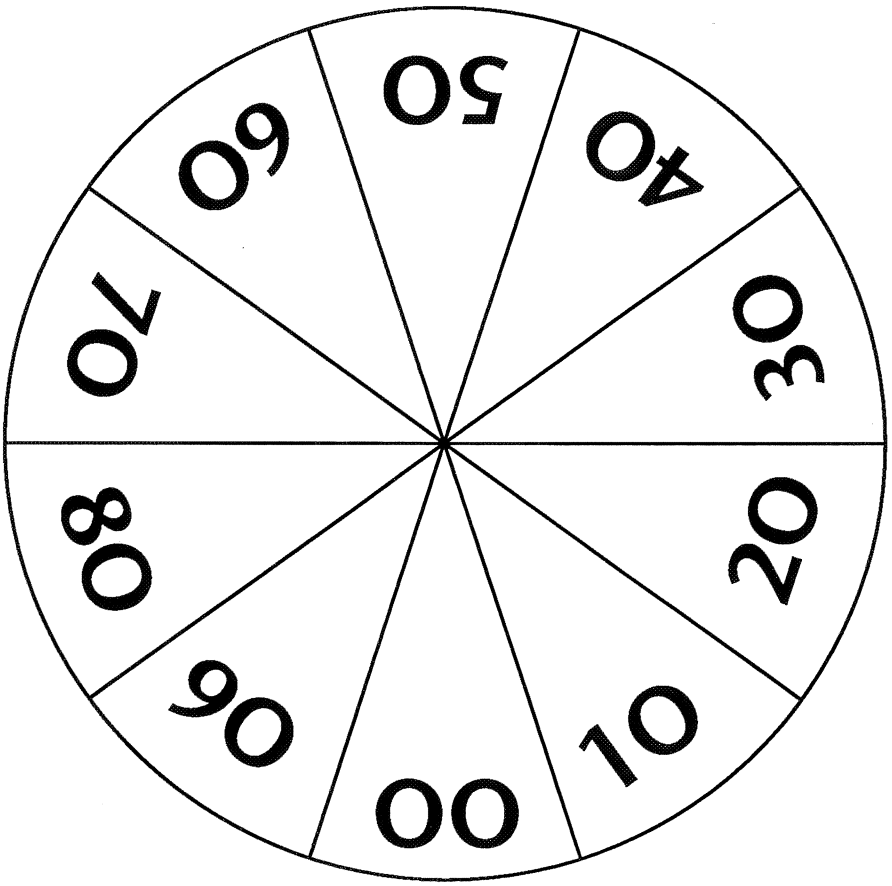
*Fraction Bars® is a registered trademark of Scott Resources, Inc.



Fraction Bars®*
for Tenths

Run tenths on
white paper.

*Fraction Bars® is a registered trademark of Scott Resources, Inc.


50
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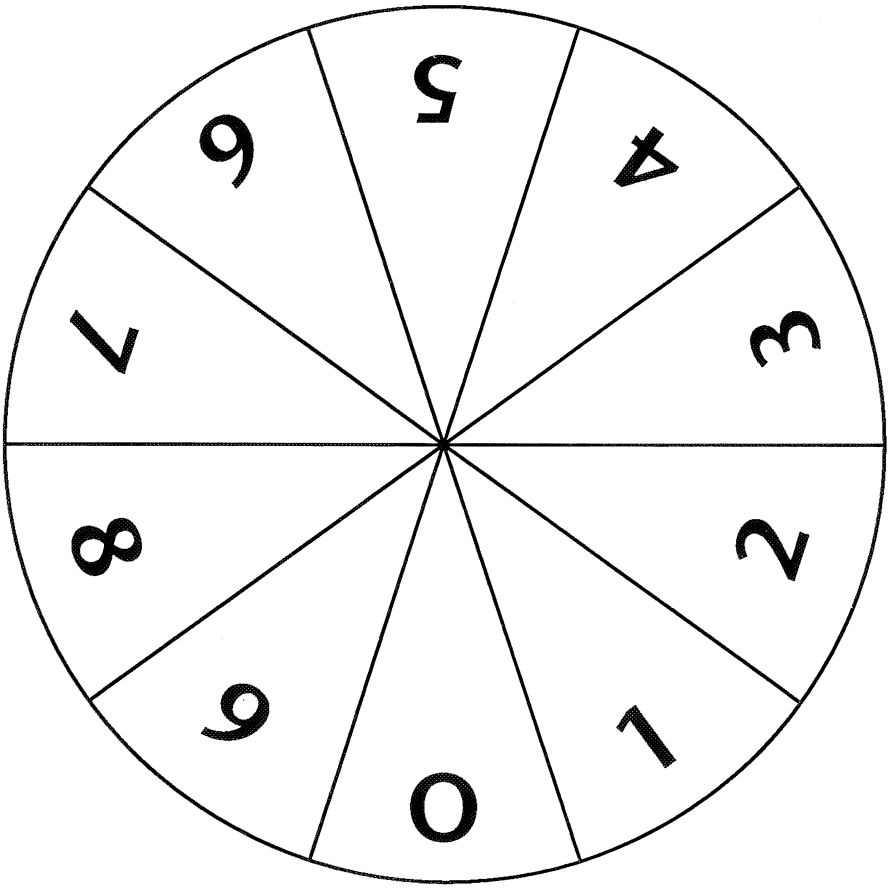
5
4
3
2
1
0
9
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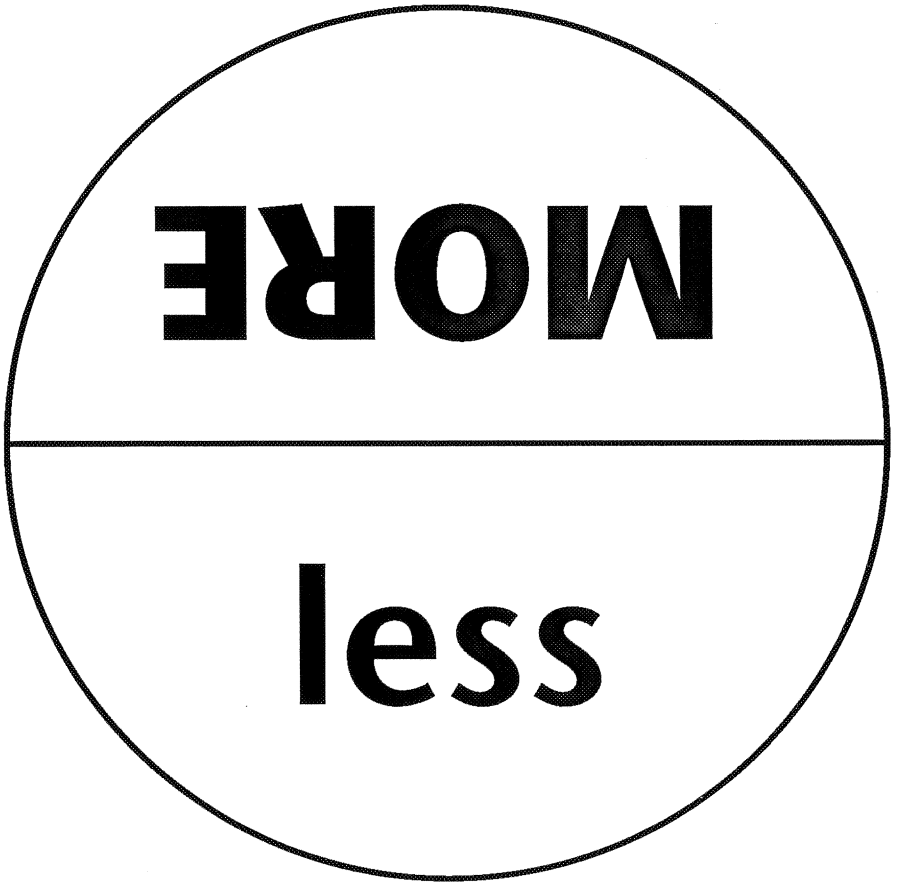
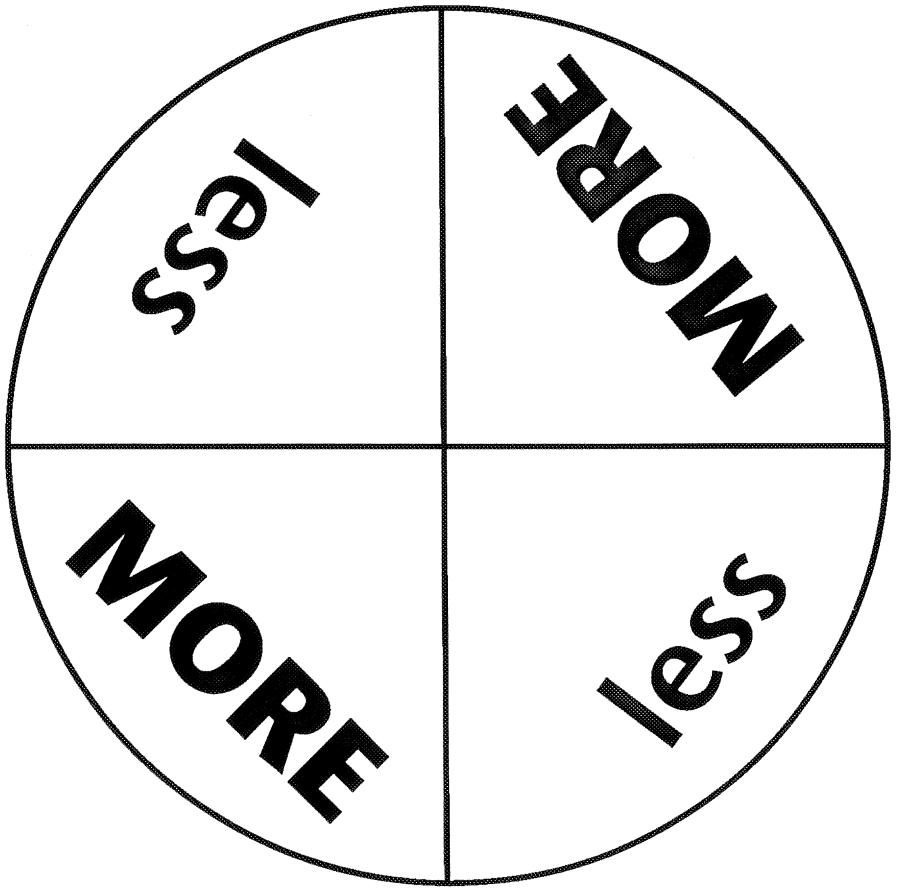
7
6


MORE
less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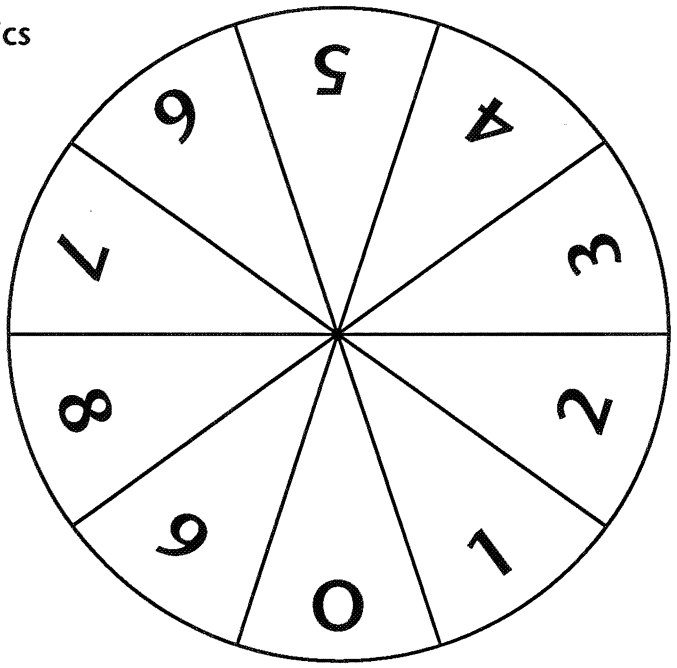
MORE
MORE
less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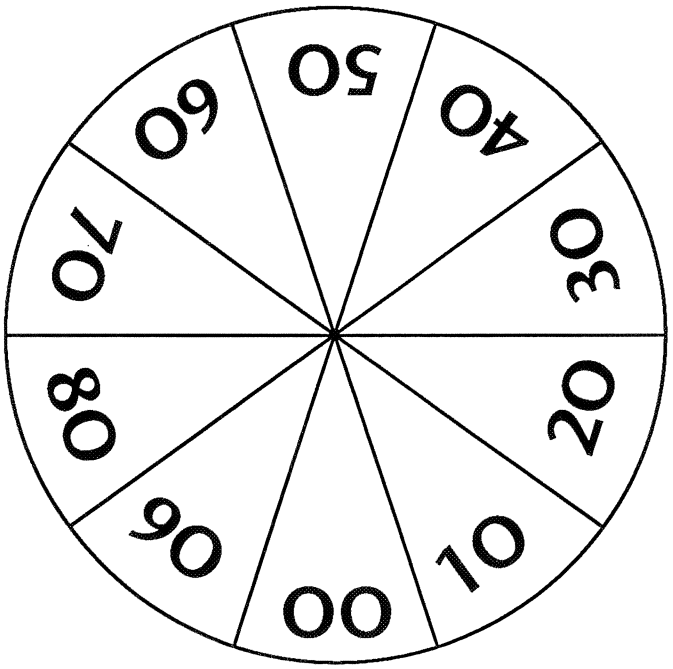
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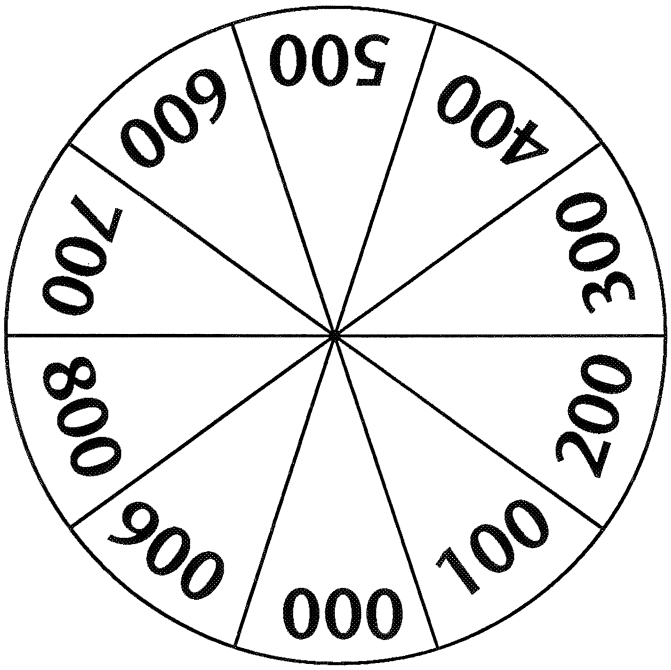
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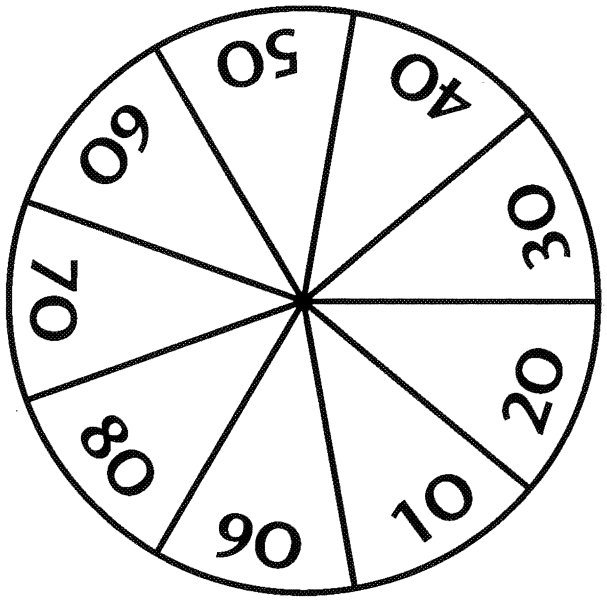
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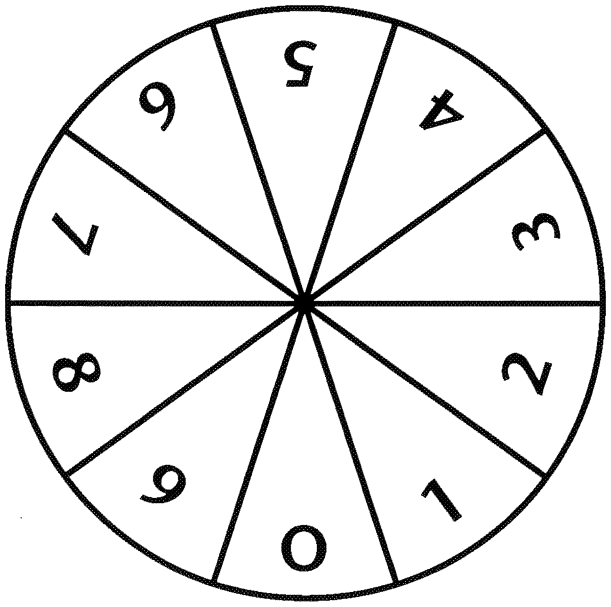
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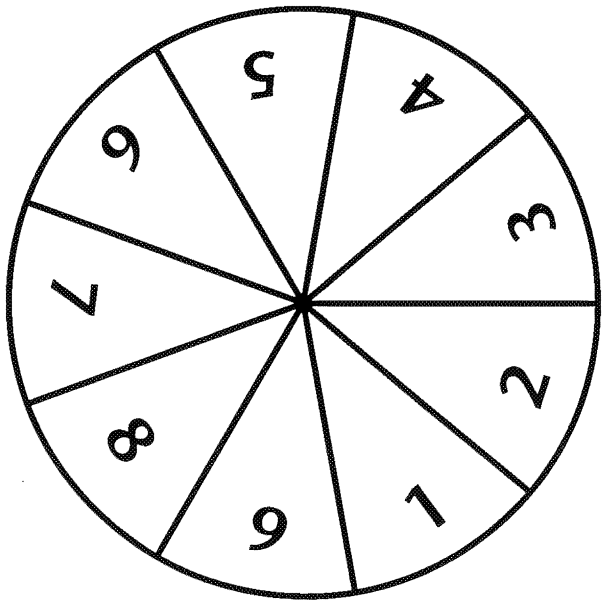
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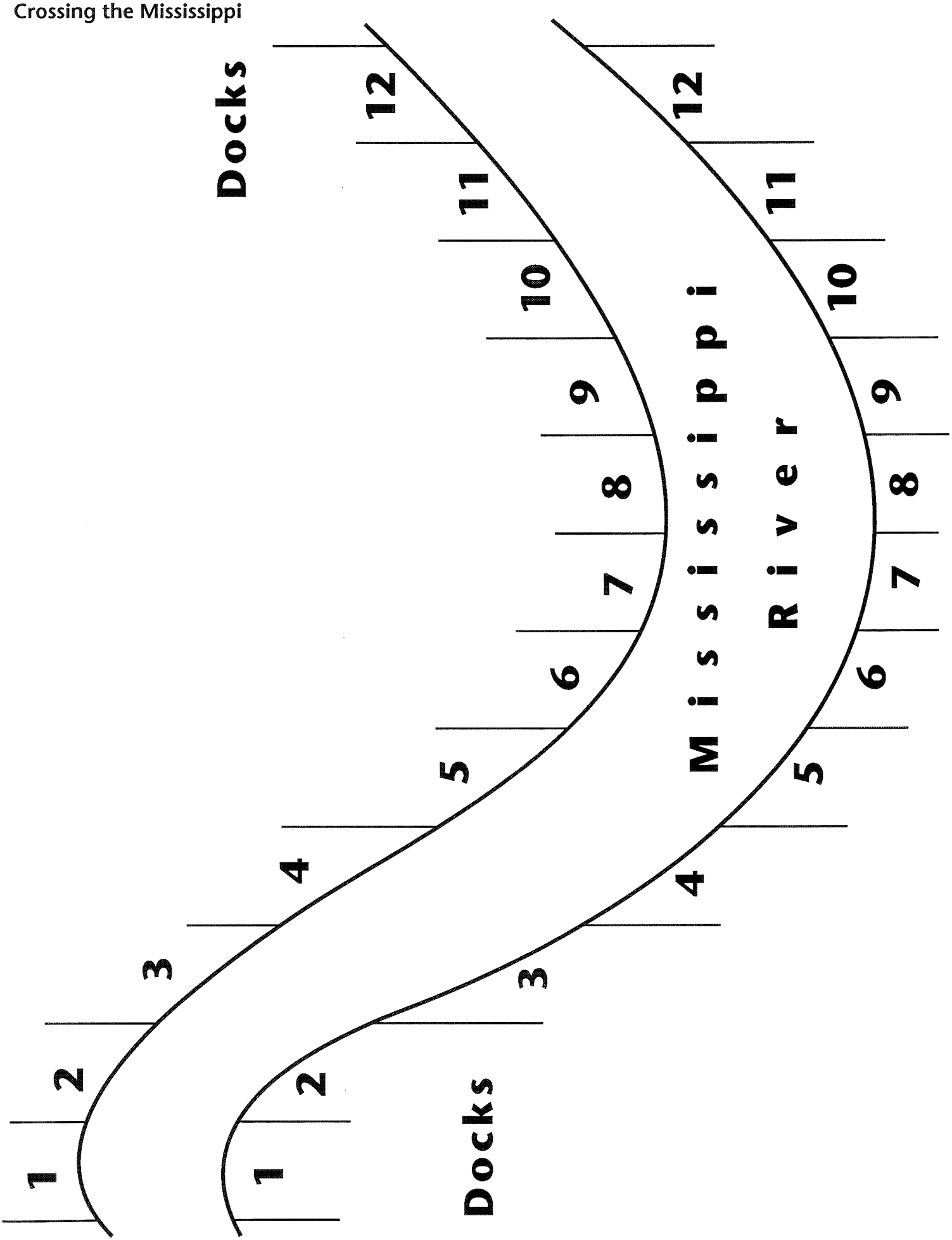
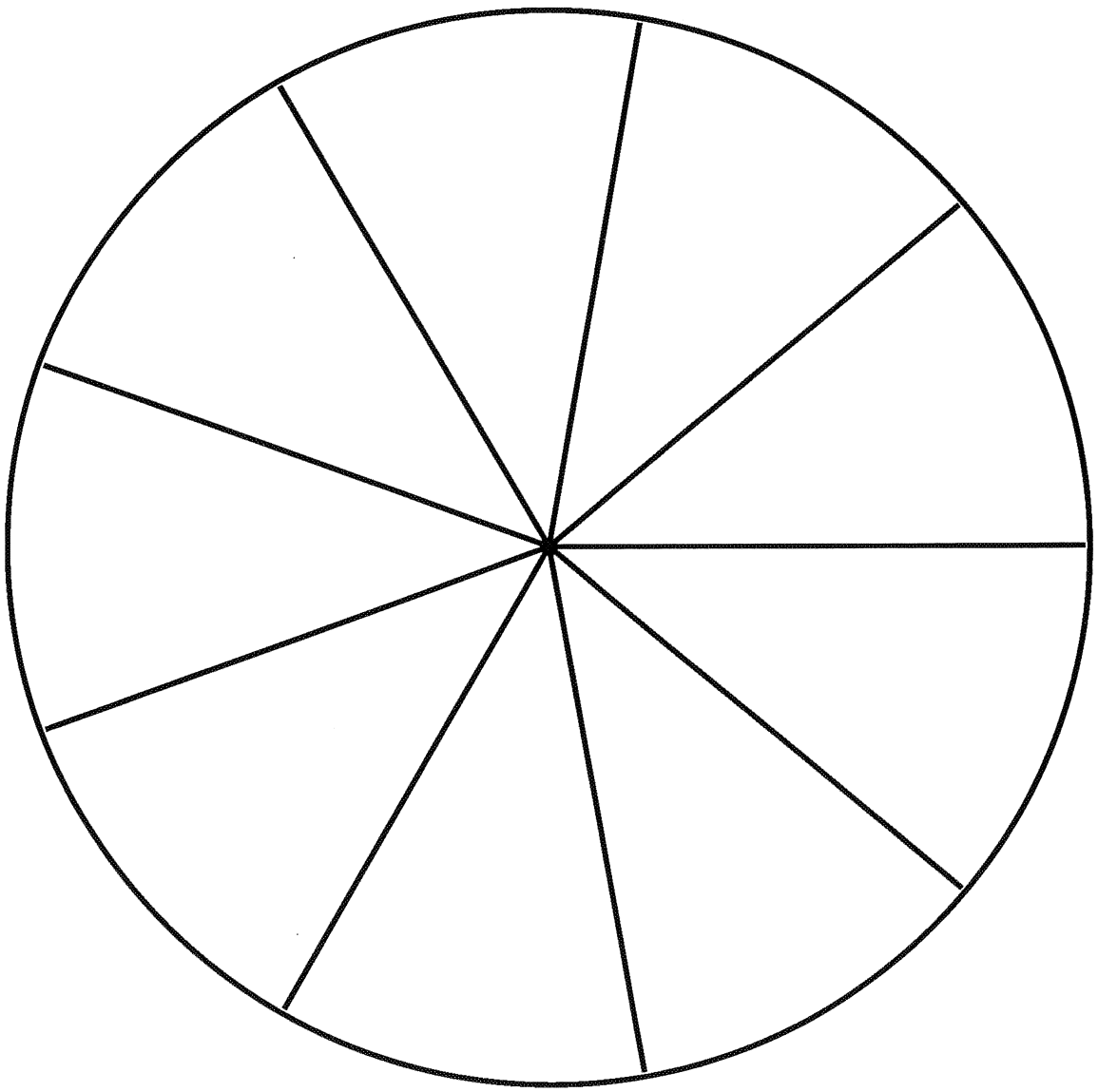

Docks
12
11
10
9
8
7
6
5
4
3
2
1
Mississippi River
12
11
10
9
8
7
6
5
4
3
2
1
Docks

Sum	1	2	3	4	5	6	7	8	9	10	11	12
Totals												



I am even.

My digits total 12.

I am 84 or less.

I am more than 50.

I am 231 base 5.

I am 66.

I am not odd.

4 and 6 are two of my factors.

10 is not a factor.

My digits total 12.

I am close to 50.

I am 4 dozen.

I am 48.

I am closer to 100 than 50.

If you start at 0 and count by fours, you'll miss me.

I have 8 tens.

The difference between 83 and me is 2.

If I were years, I'd need 15 more to make a century.

I'm 85.

I am more than 40.

I am less than 60.

If you start with 40 and count by twos, you'll miss me.

If you start with 40 and count by threes, you'll miss me.

If you start with 40 and count by fours, you'll miss me.

I am less than 45.

I am 41.

I am less than 60.

I am more than 10.

My digits total 5.

I am a prime number.

My digits differ by 1.

I am 23.

Two is not one of my factors.

Three and 27 are two of my factors.

I am less than 100.

I am a square number.

I am 81.

I am less than your age times 10.

I am more than your age times 5.

One and 11 are two of my factors.

I have the same number of mats and strips.

One of my factors is 7.

I am 77.

One factor is 1.

One factor is 2.

One factor is 5.

One factor is 10.

One factor is 25, but it is not my largest factor.

Seventy-five is not a factor.

I am 50.

I am a square number.

I am an even number.

Ten is not a factor.

I am less than 44 in base 5.

I am a factor of 32.

Eight is one of my factors.

I am 16.

Four, 5 and 6 are not my factors.

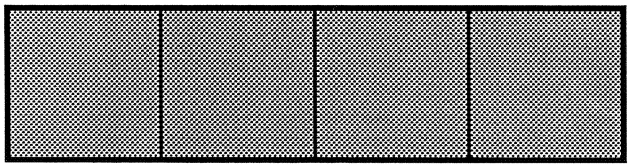
I am a prime number.

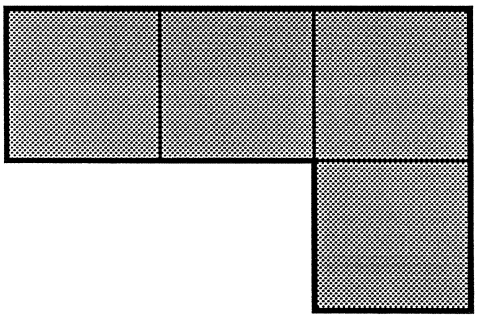
I have 2 digits.

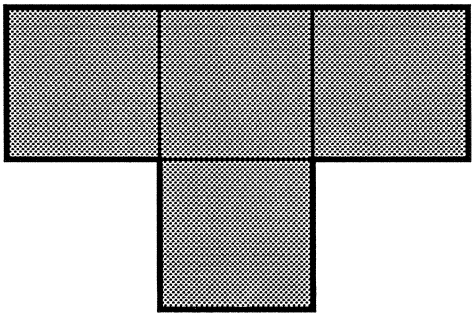
I am less than 50.

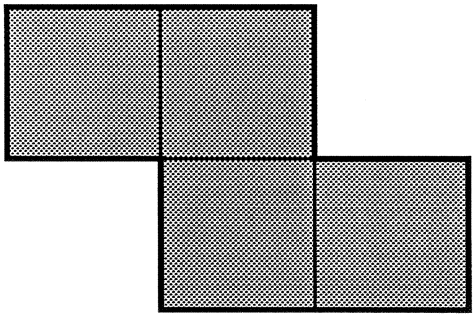
My area is 29 square units.

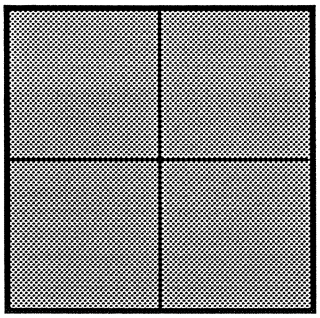
I am 29.



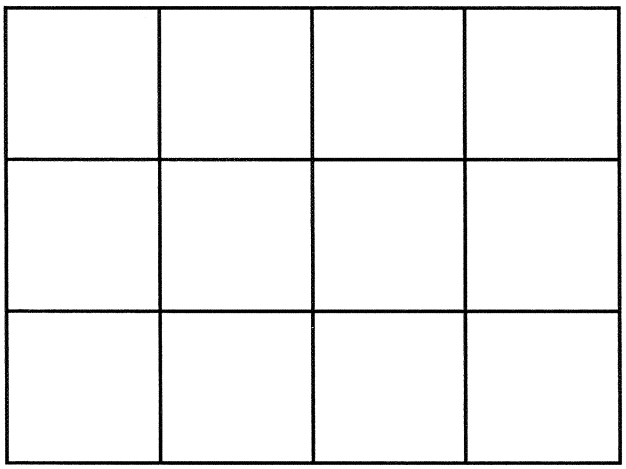




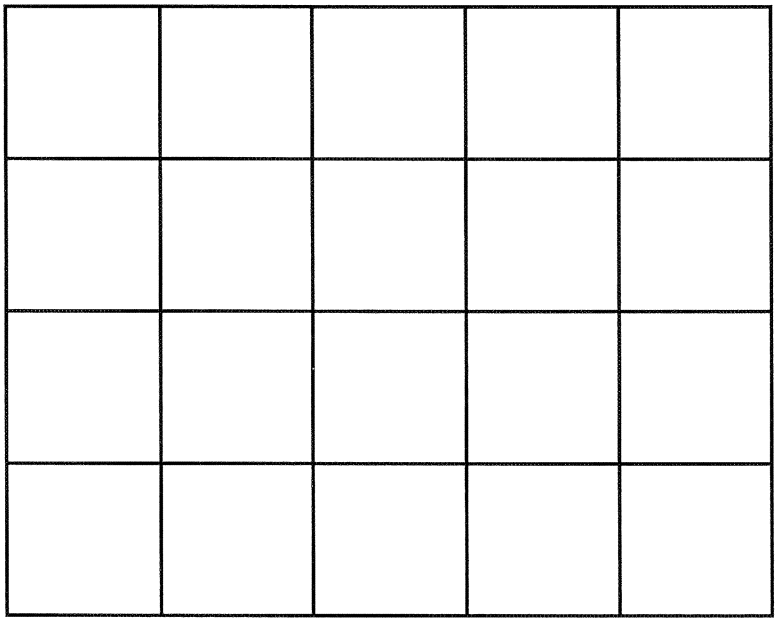


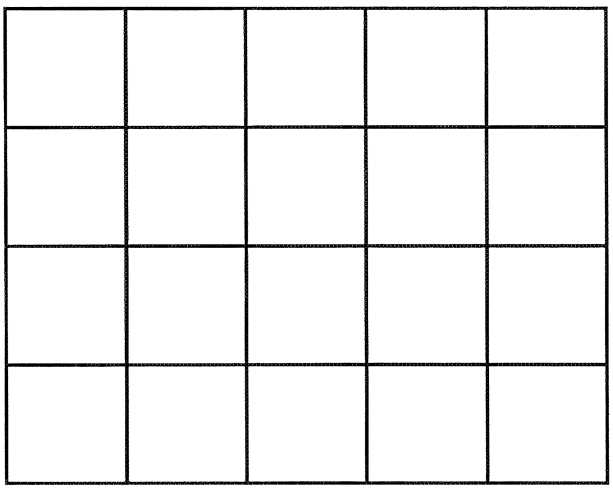


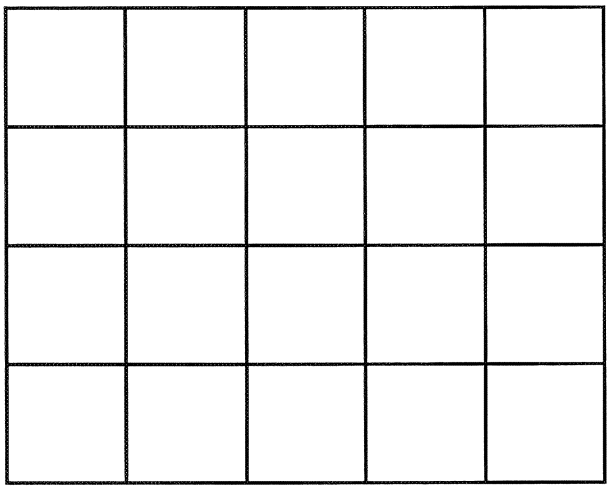
Rectangle A

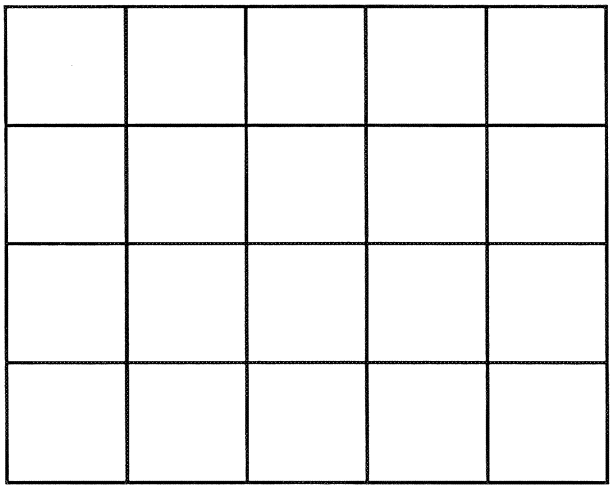


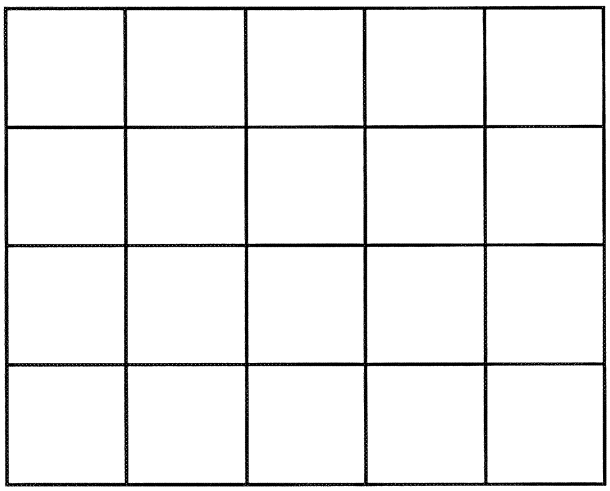
Rectangle B

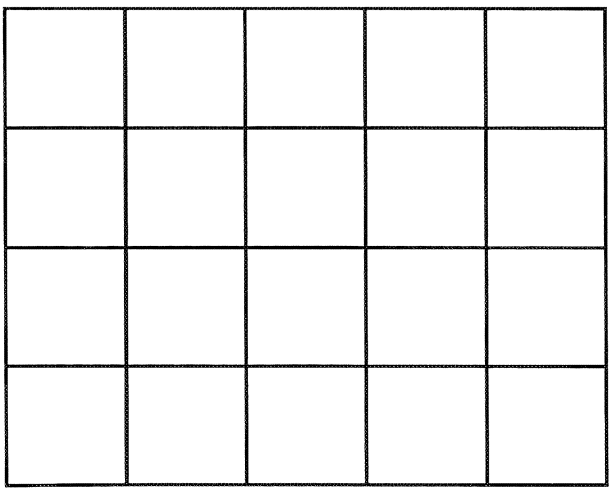


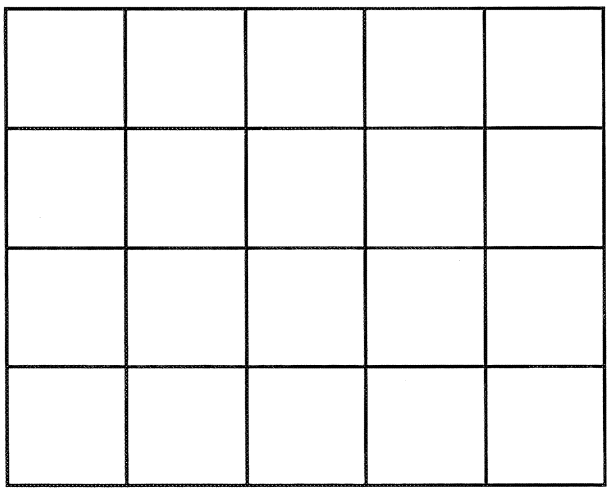


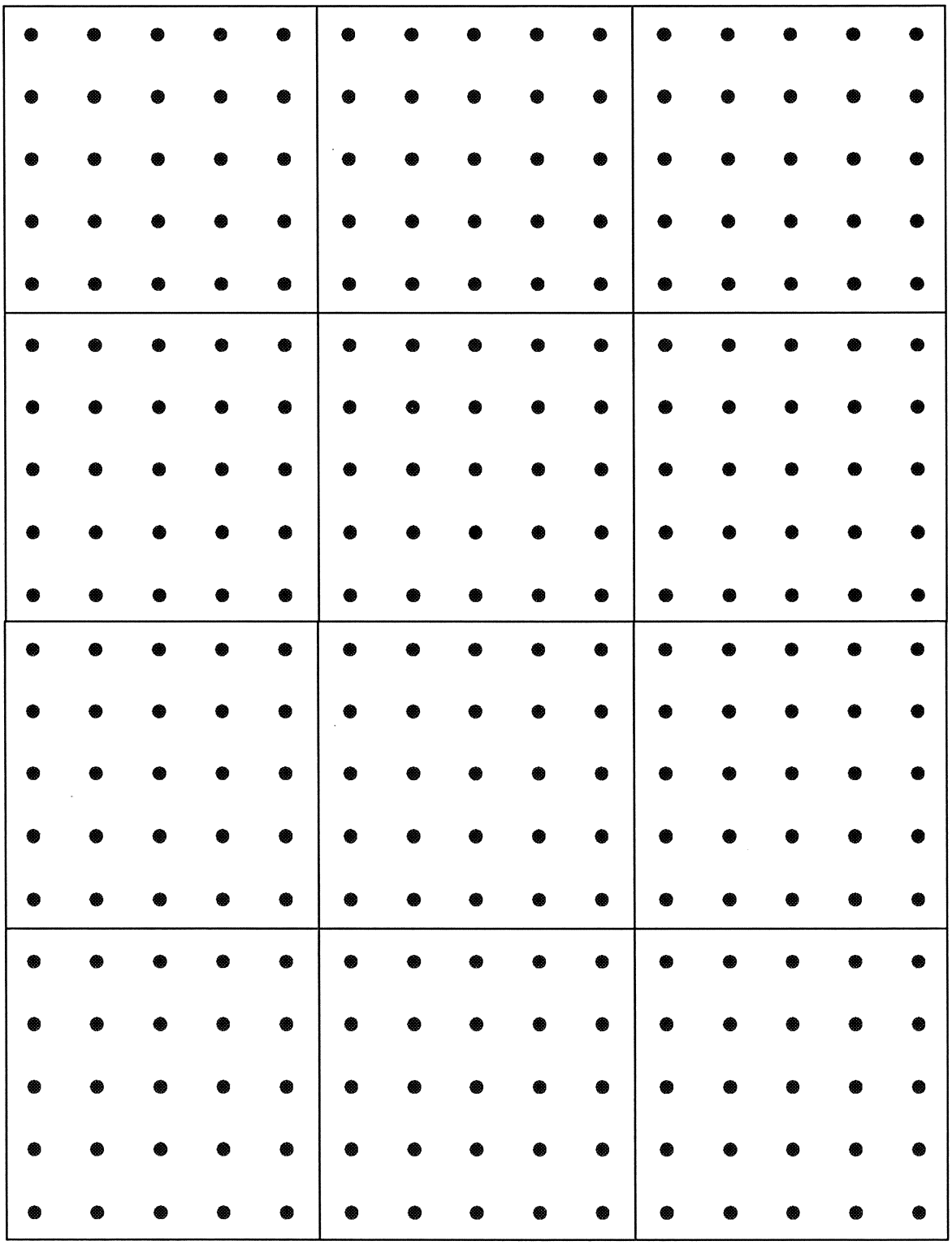












My area is not prime.

My dimensions are not the same.

Another rectangular array with a dimension of 2 can be made from my square units.

My area is a multiple of 2, 4 and 6.

My dimensions are consecutive numbers.

When my area is rearranged, I can make two other rectangles.

My perimeter is 14 linear units.

One of my dimensions rhymes with *ski.*

If a circle were in each square, I would look like a cupcake pan.

What are my dimensions?

3 x 4

Neither 1 more or 1 less than my area is prime.

My dimensions are not consecutive.

Both of my dimensions are odd.

I have less than 30 square units.

Both my dimensions are prime numbers.

My square units are not a multiple of 8, 9 or 10.

One of my dimensions is more than twice the other.

One dimension is 4 linear units smaller than the other.

One dimension added to the other totals 10.

What are my dimensions?

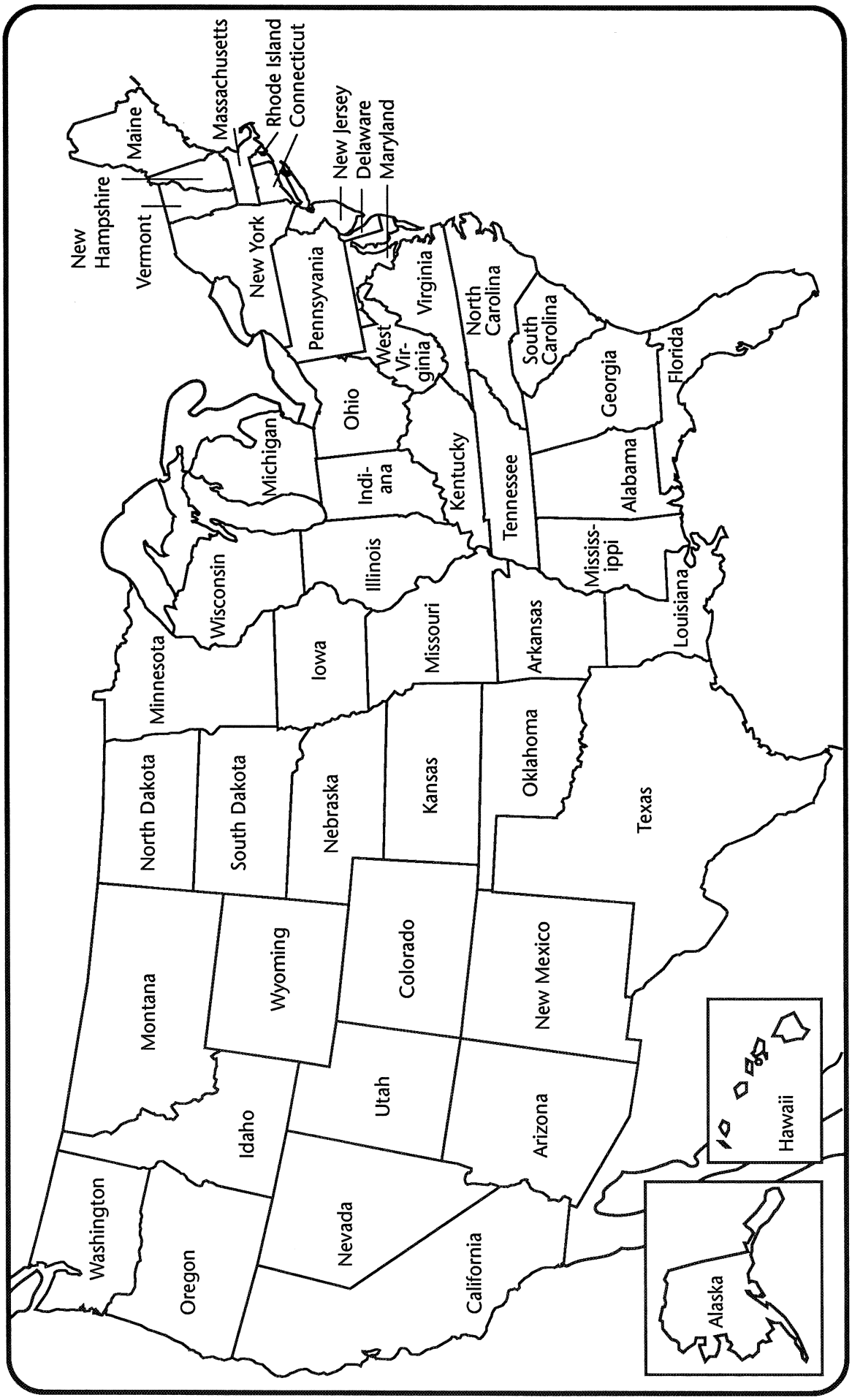
7 x 3

You can make me during Today's Array.
A 3 x 3 hides in me.
Four 2 x 2s can hide in me without touching each other.
I look the same from all sides.
I have 4 lines of symmetry.
My array is often seen on a Bingo card.
My perimeter is 20.
What are my dimensions?

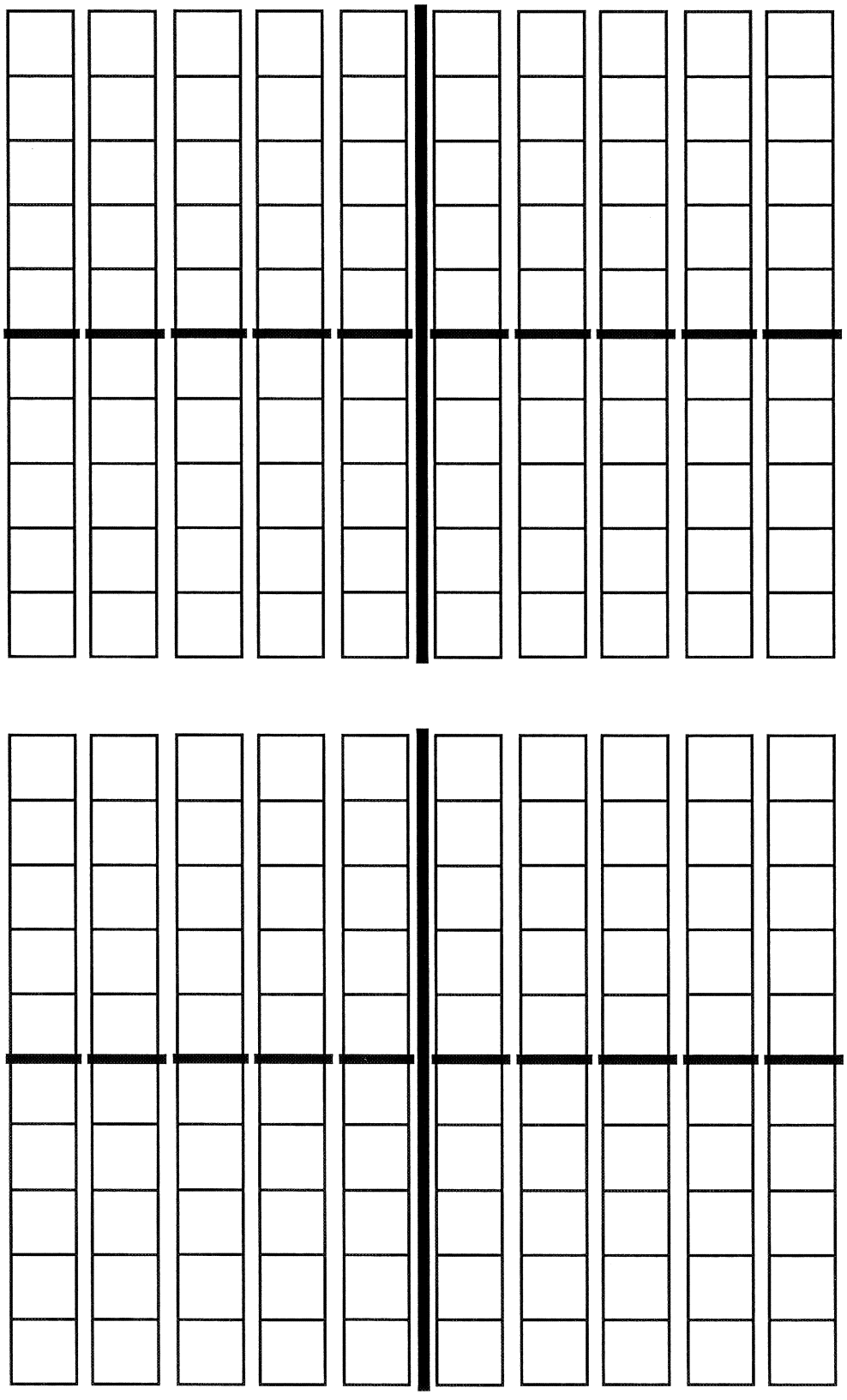
5 x 5

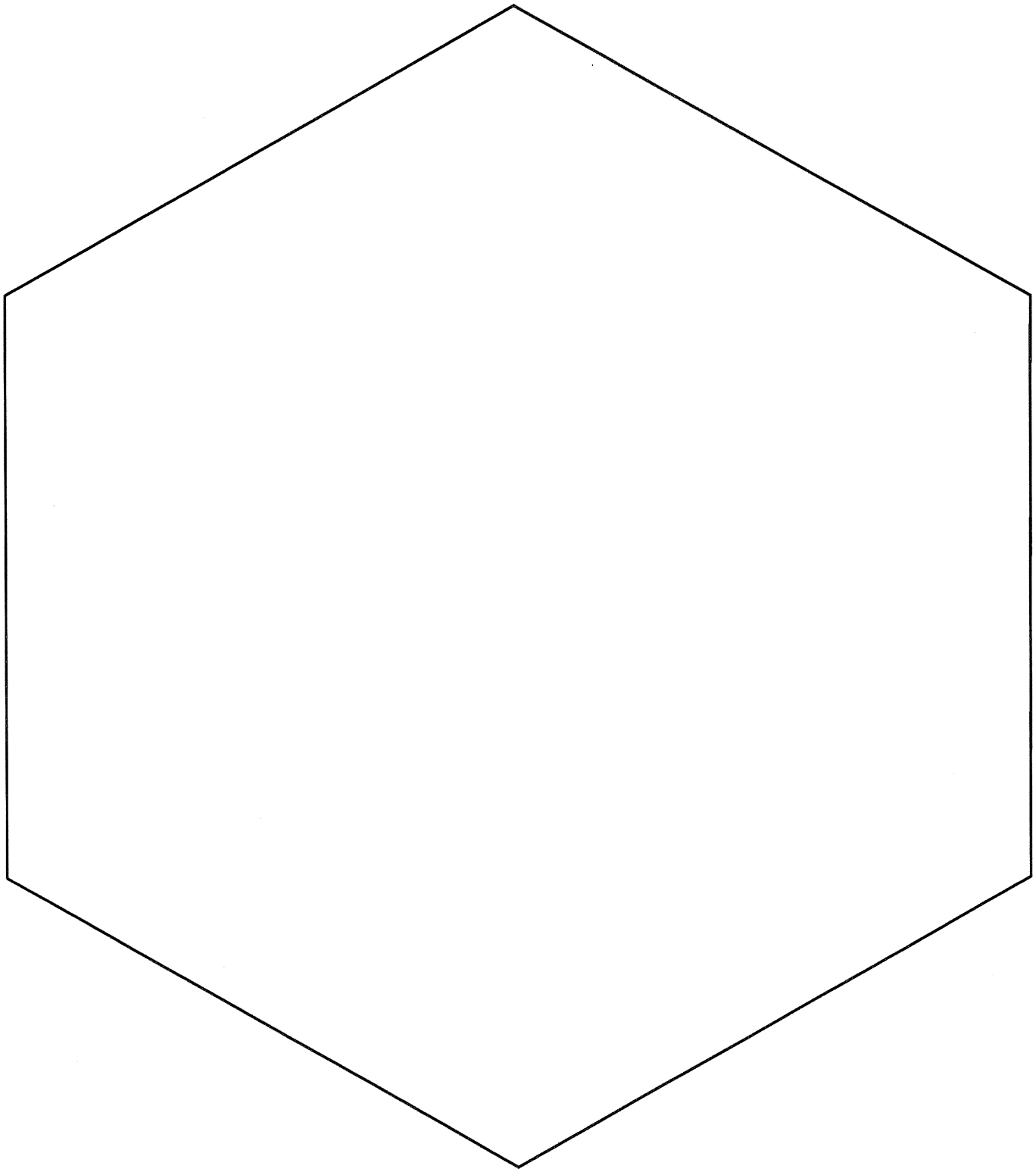
The sum of my dimensions is even.
Both of my dimensions can be found in the 2 counting pattern.
Both my dimensions are composite numbers.
One dimension is less than half the other.
My area has 8 factors.
A 3 x 3 will fit in me.
My area is a multiple of 5.
My area is more than a third, but less than one half, of 100.
The difference in my dimensions is 6.
My smaller dimension is a square number.
What are my dimensions?

4 x 10


Maine
Massachusetts
Rhode Island
Connecticut
New Jersey
Delaware
Maryland
New Hampshire
Vermont
New York
Pennsylvania
Virginia
North Carolina
South Carolina
Georgia
Florida
West Virginia
Ohio
Michigan
Indiana
Kentucky
Tennessee
Alabama
Mississippi
Louisiana
Wisconsin
Illinois
Missouri
Arkansas
Minnesota
Iowa
North Dakota
South Dakota
Nebraska
Kansas
Oklahoma
Texas
Montana
Wyoming
Colorado
New Mexico
Idaho
Utah
Arizona
Washington
Oregon
Nevada
California
Hawaii
Alaska

Ten Strip Boards
(Transparency Pattern)





Money Record Sheet
(for students)