Pi day

CRAFTS*ACTIVITIES*CIRCLE FUN

FOR K - 4

Created by
Meredith Anderson

Contents

What is Pi? (2 pages): There are two pages explaining pi, one is a simpler explanation than the other. Choose the one that works best for your class.

Hands-On Pi Experiment with Recording Sheet (2 pages): Ask your students to make a prediction first about how many times they think a string the same length as the diameter will go around the outside of each circle? Will it be different or the same for different sized circles?

Pi Day Fun Facts (1 page)

Pi Day Color and Cut (2 pages): Color the pi symbol then cut it out. Great fine motor practice! Color in all of the circles and pi shines through in the white space!

The Symbol Pi (1 page): Greek alphabet page.

Mystery Spiral (1 page): Have a metric ruler available for this activity. For younger students, direct them to measure each circle in centimeters and then write how many centimeters across each circle is. For older students, see if they can figure out what this spiral represents. Have a Digits of Pi page handy for reference. With the last circle partially cut off, have your students guess what the diameter is.

Digits of Pi (3 pages): In two fonts - choose the one the you prefer. You may ask your students to find and color/highlight a set of six consecutive 9s, or for them to find sets of three consecutive numbers (answer key at end of this unit). You could also just have them find all the 3s, or their favorite number. If you'd like to challenge your students, set a timer for two or three minutes and have them memorize as many digits of pi as they can, then write it on the page provided. You may also want to have them paste their pi cut out on this page. Award certificates are included for this activity if you want to make Pi Day even more special.

Pi Day Chains (3 pages): Pi to 9 decimal places represented by dots. Color each decimal place differently or use Do-a-Dot markers to dot them. If you don't have Do-a-Dot markers, you can make circle stampers with foam stickers on bottle tops or you can use pom poms dipped in paint to paint the dots.

Cut along the dotted lines and then glue your pi chain together. The first sheet has guides for how many dots should be shaded. The second page has no guides to make it more challenging. The third page has 4 extra "B" chains and pi is listed to 20 decimal places, in case you want to make really long chains (you will need 2 sheets of the "B" chains in order to get all 20 decimal places)! Coil them up after you are done and secure with a paperclip and you have a pi "bracelet."

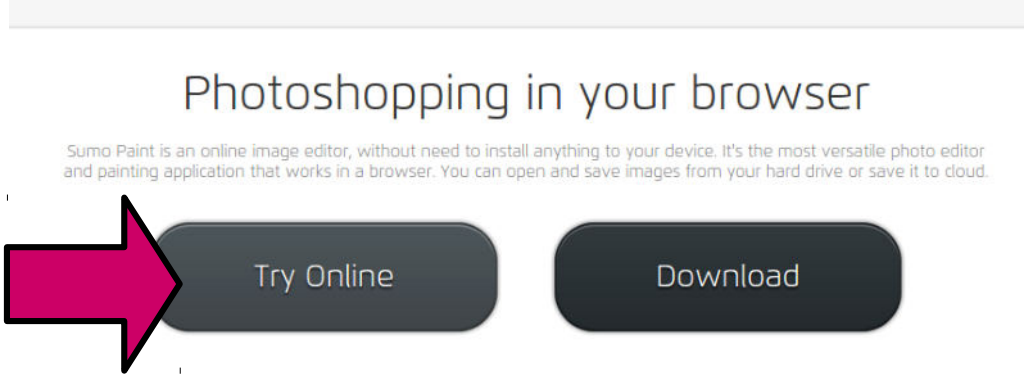
Kandinsky style art project (4 pages) Parents Magazine: (clickable link) has a great page detailing this. I tried it out at home with my kids recently and it was a huge hit! Use cups, lids, tape rolls, marker caps, etc. as traceable circles or use the included sheets if you want a faster project. The areas where the circles overlap really make this project pop! Concentric circle page has two options, thin or thick lines.

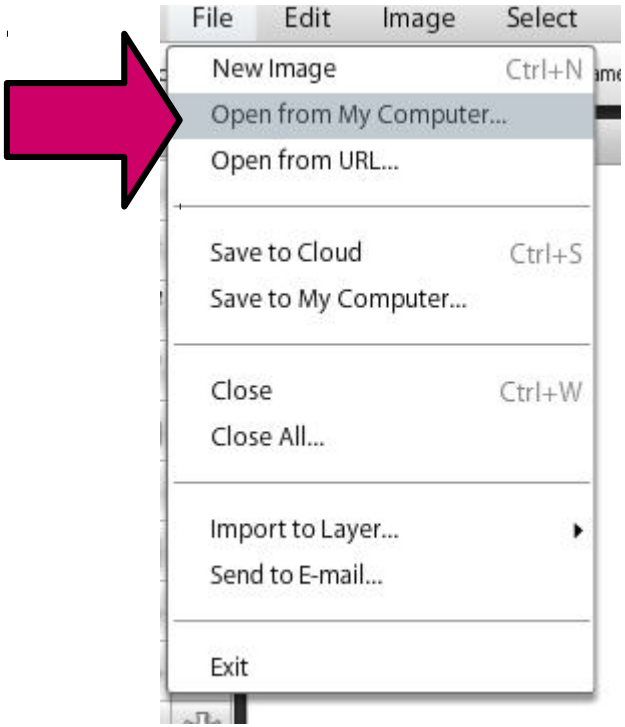
Digital Circle Art

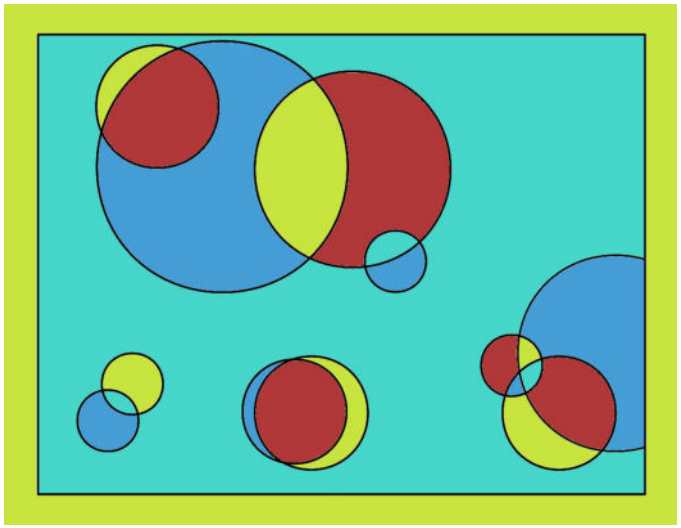
You can color these digitally as well! Download the images **here**!

https://drive.google.com/folderview?id=0B6KrsXpHNmtJdVJHUEM3MEFaSmc&usp=sharing

Use your favorite graphics editing program, or go to **SumoPaint** (sumopaint.com) and click "Try Online." (no download necessary):



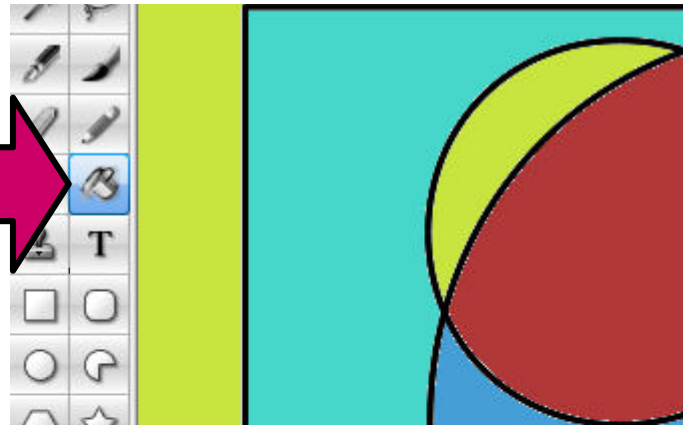




Open locally saved file or from the image URL

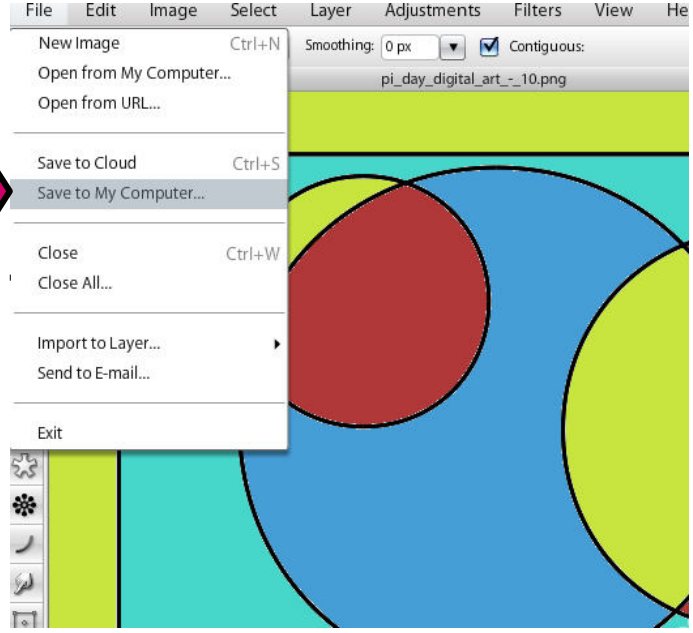
Use the color picker on the right to choose colors, then fill in the picture!

3

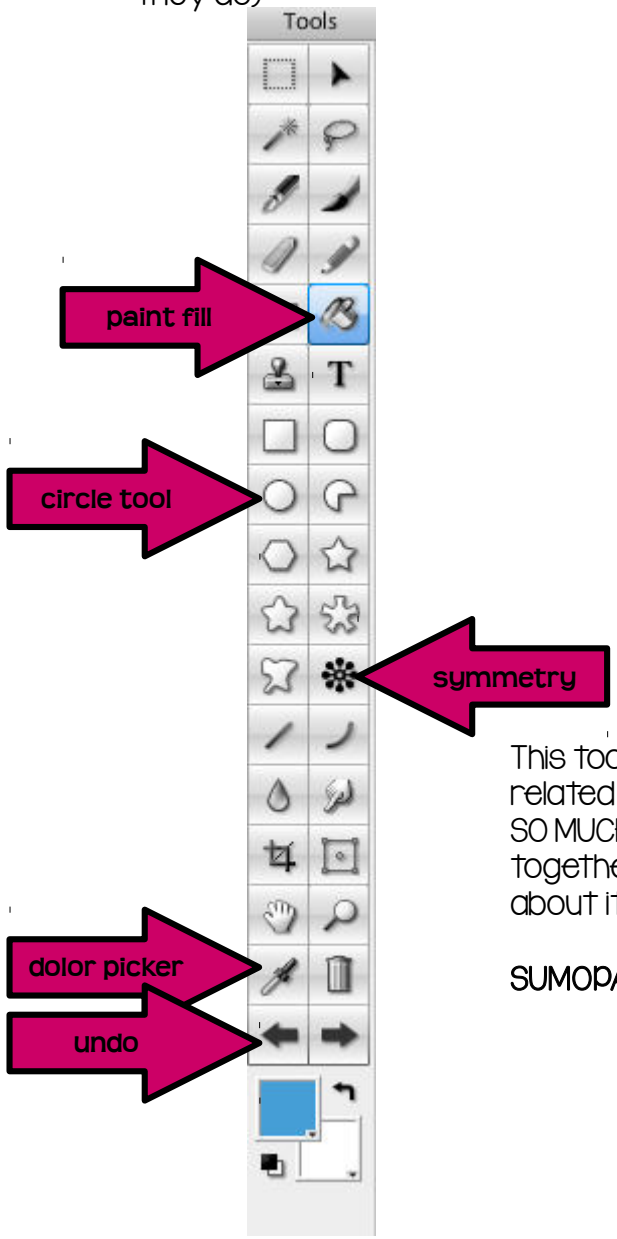


When you are done, don't forget to Save to My Computer!

4



You can also use this program to create more digital Circle Art! Some of the most helpful tools are shown below (if you hover over them they also tell you what they do):



This tool is not necessarily related to circle art, but is SO MUCH FUN that I put together a free tutorial all about it **here**:

SUMOPAINT STEAM ART

Contents

Samples of completed activities included in this resource:

Kandinsky inspired art

Pie dot chain as a bracelet

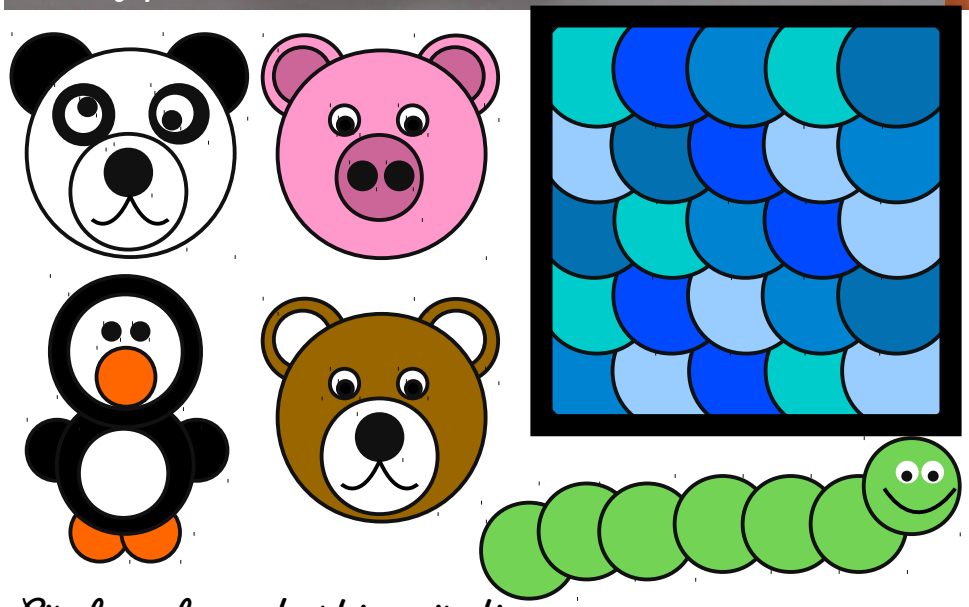
Pie dot chain

Other Activities

Make wearable Pi Day Art (clickable link, from my blog) or explore circumference with toy cars and trucks (a great way for young children in particular to get a solid idea of circumference).

Pi day pasta necklace

Hands on circumference exploration

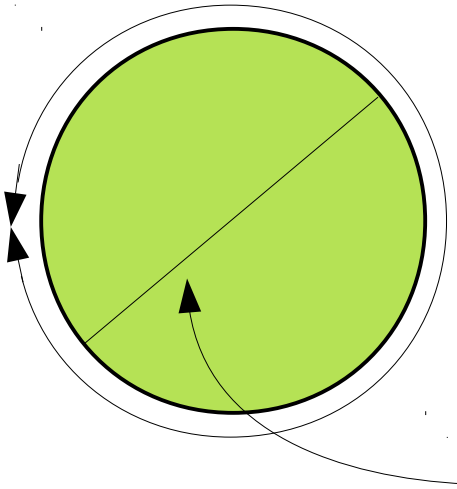


Circle pals and art inspiration

If you have circular hole punches, particularly ones of various sizes, you can create fun art with the circles, semicircles, and the negative space left by the hole punches! Use bright colors or paint chips/samples!

What is Pi?

To find the **circumference:** measure around the edge of the circle



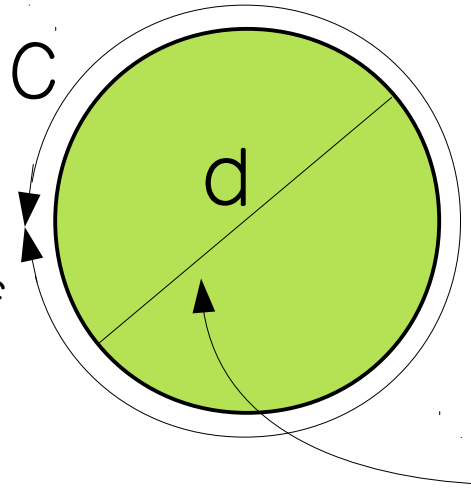
To find the **diameter:** measure across the center of the circle

The number π (pi) is an important number in mathematics. The number pi is slightly larger than the number 3, and when you multiply pi times the diameter of a circle, you will get the circle's circumference!

3.14 is a close estimate of the number pi, so Pi Day is celebrated on March 14th (3.14).

What is pi?

To find the **circumference (C):** measure around the edge of the circle



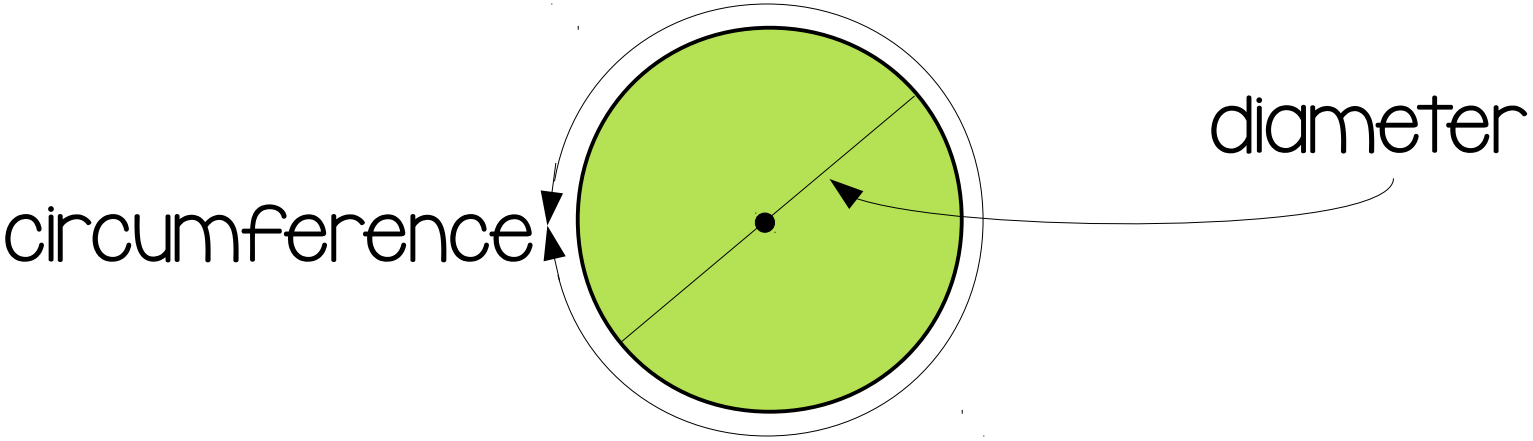
To find the **diameter (d):** measure across the center of the circle

$C = \pi d$ → This math sentence means that the circumference, C, is equal to pi times the diameter, d.

The number π (pi) is an important number in mathematics. It is the ratio of a circle's circumference to its diameter. A ratio shows how two numbers compare. This ratio is always the same, whether you have a small or a large circle. The number π is a *constant.* It is slightly more than the number 3!

Since pi goes on FOREVER 3.14159265358979323846264338327..., we often shorten pi to 3.14 and celebrate Pi Day on March 14th (3/14).

Hands-On Pi Experiment



Try this experiment! All you need are some circular objects, string, and scissors. A tire, a circular lid to a container, or a paper plate are some examples of objects you can use. Cut the string the same length as the *diameter.* The *diameter* is a straight line that passes through the center of the circle. Now place that string around the *circumference,* the outside of your circle. About how many string lengths around is your circle? Mark off your starting point so you know when you get back around to it again. Try this with several different circles and record your results!

Name: _____

Pi Day Experiment Recording Sheet

Circular Object	How Many String Lengths to Make the Circumference

3.1415926535897932384626433832795028841971693993751058209749445923078164062862089986280348253421170679844592307816406286208998628

Pi Day Fun Facts

Pi is the 16th letter in the Greek alphabet.

In Europe, Pi Day is celebrated on July 22nd instead of March 14th. A good estimate of pi is the fraction 22/7.

$\frac{22}{7}$

I prefer pi.

This sentence is a palindrome. The sentence is same forward and backward!

Pi Day (March 14th) is Albert Einstein's birthday!

Happy Pi Day!

Pi has been known to humans for almost 4000 years, but the symbol for it was only introduced in the last 300 years.

$\frac{355}{113}$

Some other good approximations of pi.

$\frac{52163}{16604}$

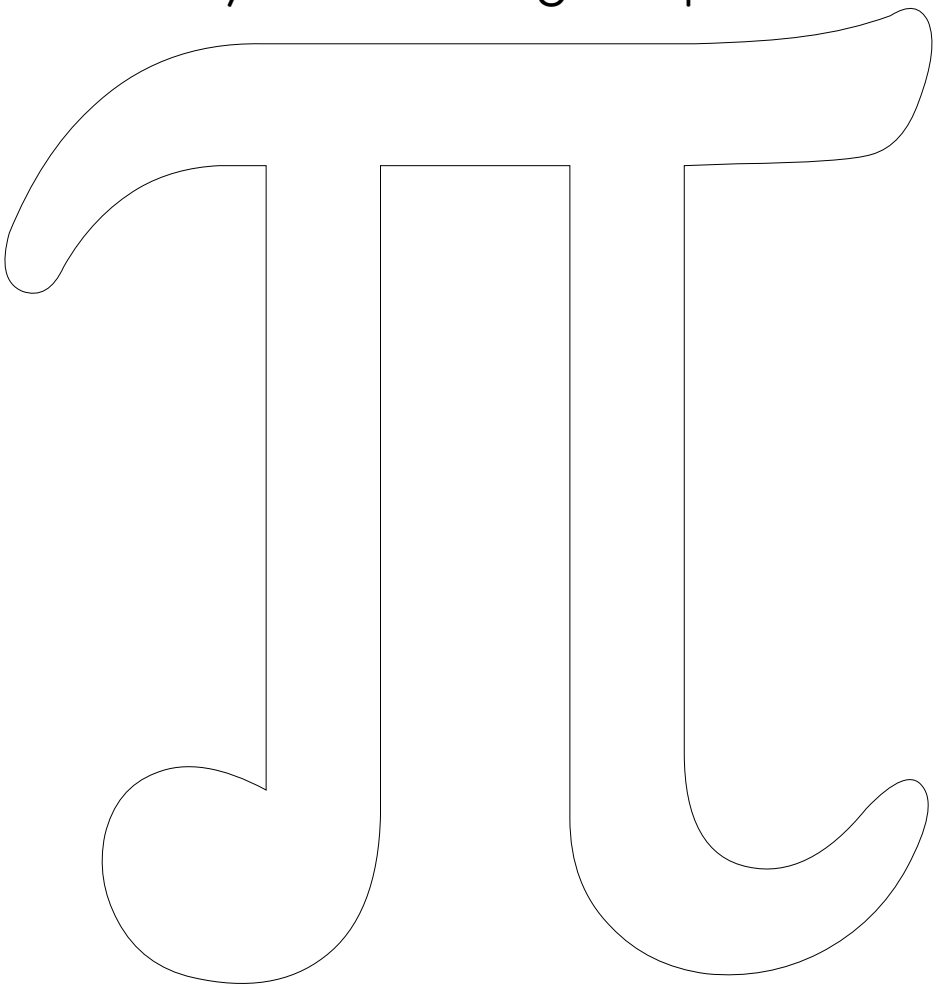
The first million decimal places of pi consist of 99,959 zeros, 99,758 1s, 100,026 2s, 100,229 3s, 100,230 4s, 100,359 5s, 99,548 6s, 99,800 7s, 99,985 8s, and 100,106 9s.*

*Arndt, Jörg and Christoph Haenel. 2001. Pi Unleashed. Trans. Catriona and David Lischka. New York, NY: Springer-Verlag Berlin Heidelberg.

825342117067982148084459230781640628620899862803482534

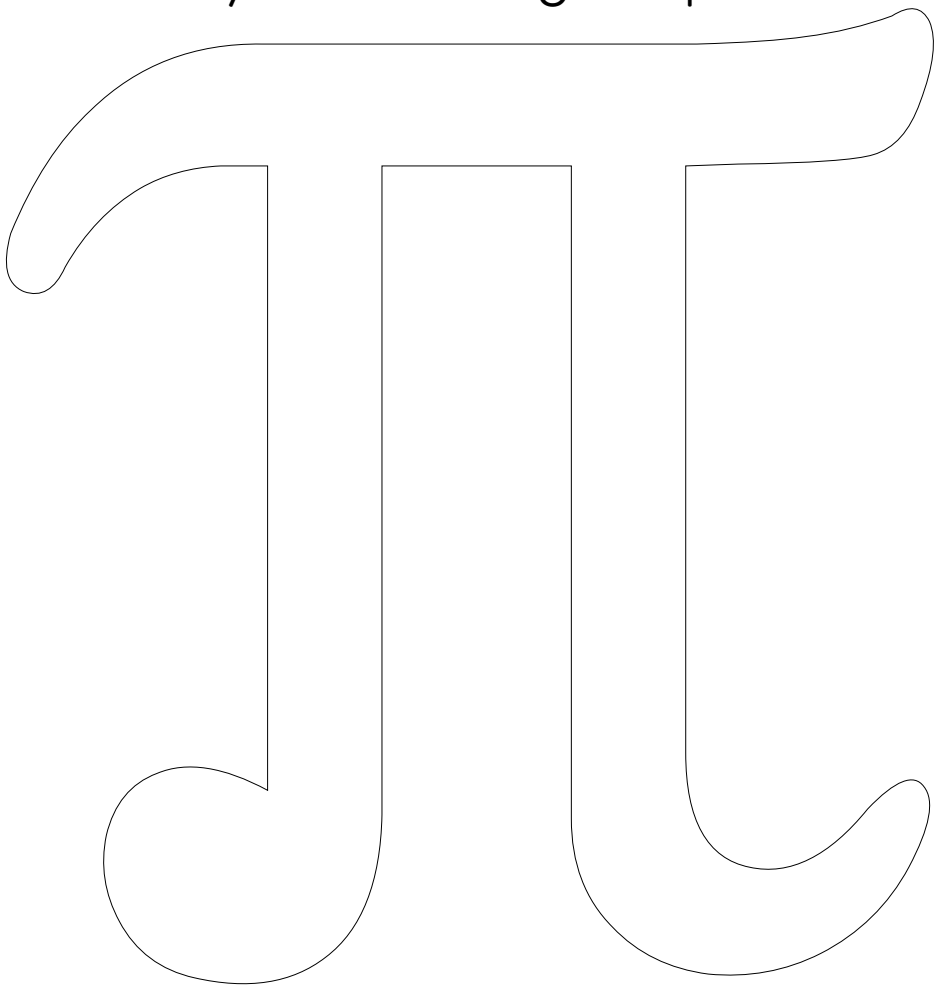
Color and Cut it Out

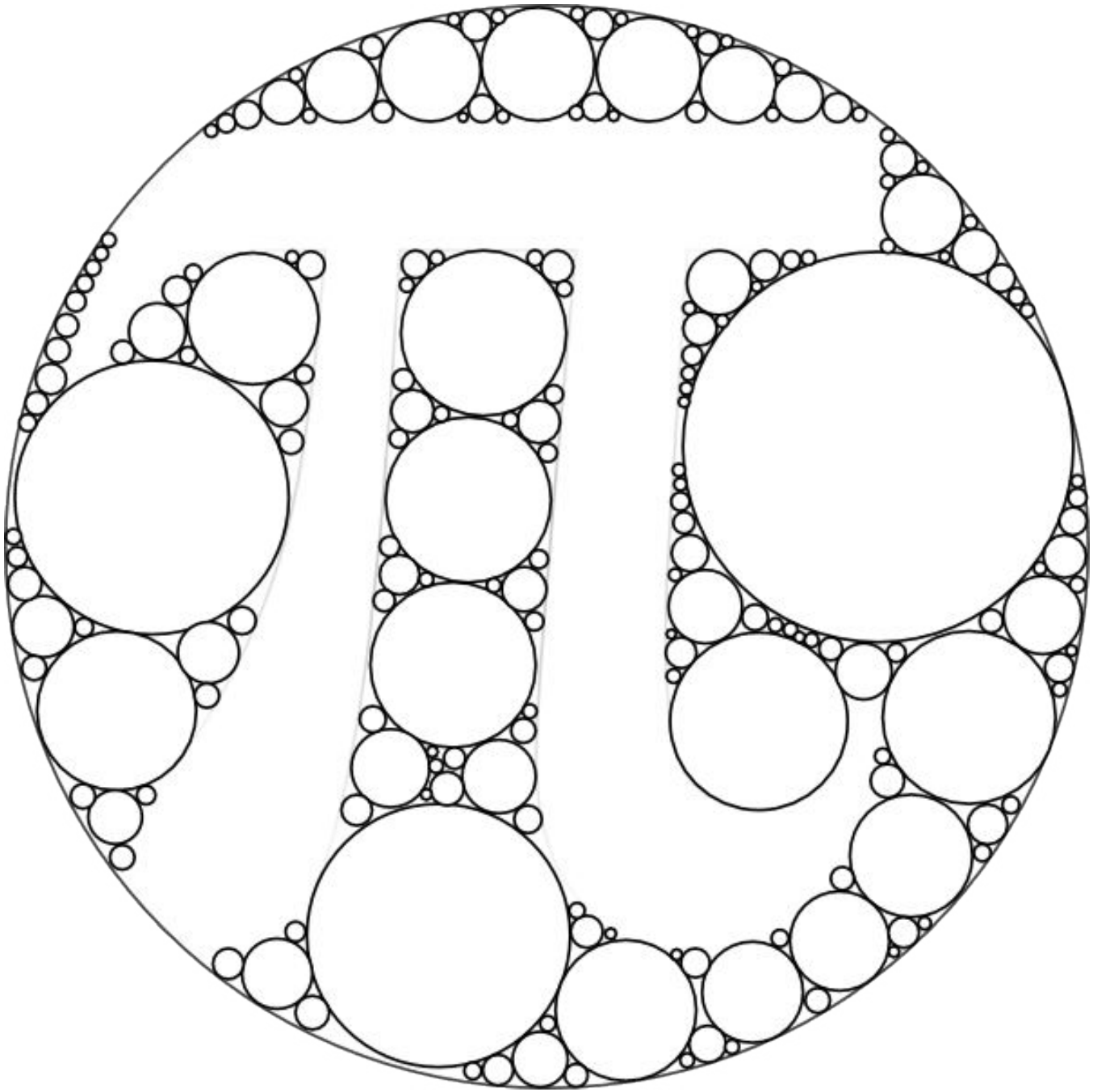
Can you cut along the pi line?



Color and Cut it Out

Can you cut along the pi line?





The Symbol Pi

Name: _____

Mathematicians, scientists, and engineers sometimes use *symbols* instead of numbers. Where does the symbol π come from? It comes from the Greek alphabet!

Greek Alphabet: Upper Case

Α alpha	Β beta	Γ gamma	Δ delta	Ε epsilon	Ζ zeta
Η eta	Θ theta	Ι iota	Κ kappa	Λ lambda	Μ mu
Ν nu	Ξ xi	Ο omicron	Π pi	Ρ rho	Σ sigma
Τ tau	Υ upsilon	Φ phi	Χ chi	Ψ psi	Ω omega

Greek Alphabet: Lower Case

α alpha	β beta	γ gamma	δ delta	ε epsilon	ζ zeta
η eta	θ theta	ι iota	κ kappa	λ lambda	μ mu
ν nu	ξ xi	ο omicron	π pi	ρ rho	σ sigma
τ tau	υ upsilon	φ phi	χ chi	ψ psi	ω omega

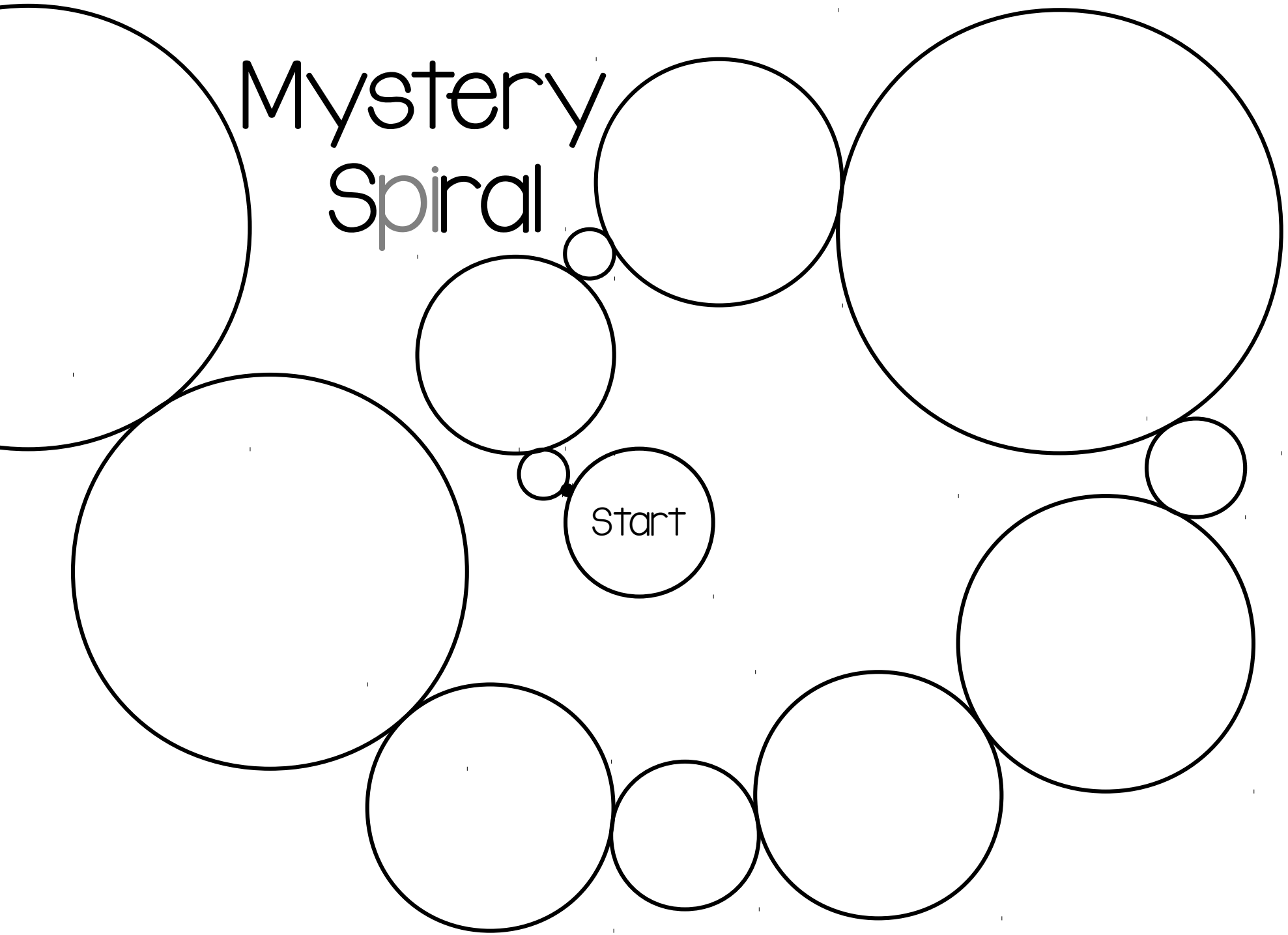
Can you find pi? Try writing the Greek letter in upper and lower case: _____

How many more letters does our alphabet have than the Greek alphabet? _____

What do you notice about the names of the first two Greek letters? _____

_____

Mystery Spiral



Digits of Pi

Name: _____

3141592653589793238462643383279502884197169399375105820974944592307816406286208998628034825342117067982148086513282306647093844609550582231725359408128481117450284102701938521105559644622948954930381964428810975665933446128475648233786783165271201909145648566923460348610454326648213393607260249141273724587006606315588174881520920962829254091715364367892590360011330530548820466521384146951941511609433057270365759591953092186117381932611793105118548074462379962749567351885752724891227938183011949129833673362440656643086021394946395224737190702179860943702770539217176293176752384674818467669405132000568127145263560827785771342757789609173637178721468440901224953430146549585371050792279689258923542019956112129021960864034418159813629774771309960518707211349999998372978049951059731732816096318595024459455346908302642

Digits of Pi

Name: _____

3.14159265358979323846264338327950288419716939937510582
09749445923078164062862089986280348253421170679821 48
08651328230664709384460955058223172535940812848111745 0
28410270193852110555964462294895493038196442881097566 5
93344612847564823378678316527120190914564856692346034 8
61045432664821339360726024914127372458700660631558817 4
88152092096282925409171536436789259036001133053054882
04665213841469519415116094330572703657595919530921861 1738
19326117931051185480744623799627495673518857527248912279 3
81830119491298336733624406566430860213949463952247371 9
07021798609437027705392171762931767523846748184676694
05132000568127145263560827785771342757789609173637178 7
21468440901224953430146549585371050792279689258923542
01995611212902196086403441815981362977477130996051870721 3
49999998372978049951059731732816096318595024459455346
90830264252230825334468503526193118817101000313783 8

Digits of Pi

Name: _____

How many digits of pi can you remember?

AWARD CERTIFICATE

Presented to:

_____

for remembering ___digits of pi.

π

AWARD CERTIFICATE

Presented to:

_____

for remembering ___digits of pi.

π

AWARD CERTIFICATE

Presented to:

_____

for finding six consecutive nines in the digits of

π

You've got pizzazz!

AWARD CERTIFICATE

Presented to:

_____

for finding six consecutive nines in the digits of

π

You've got pizzazz!

AWARD CERTIFICATE

Presented to:

_____

for being a pi expert!

π

You've got pizzazz!

AWARD CERTIFICATE

Presented to:

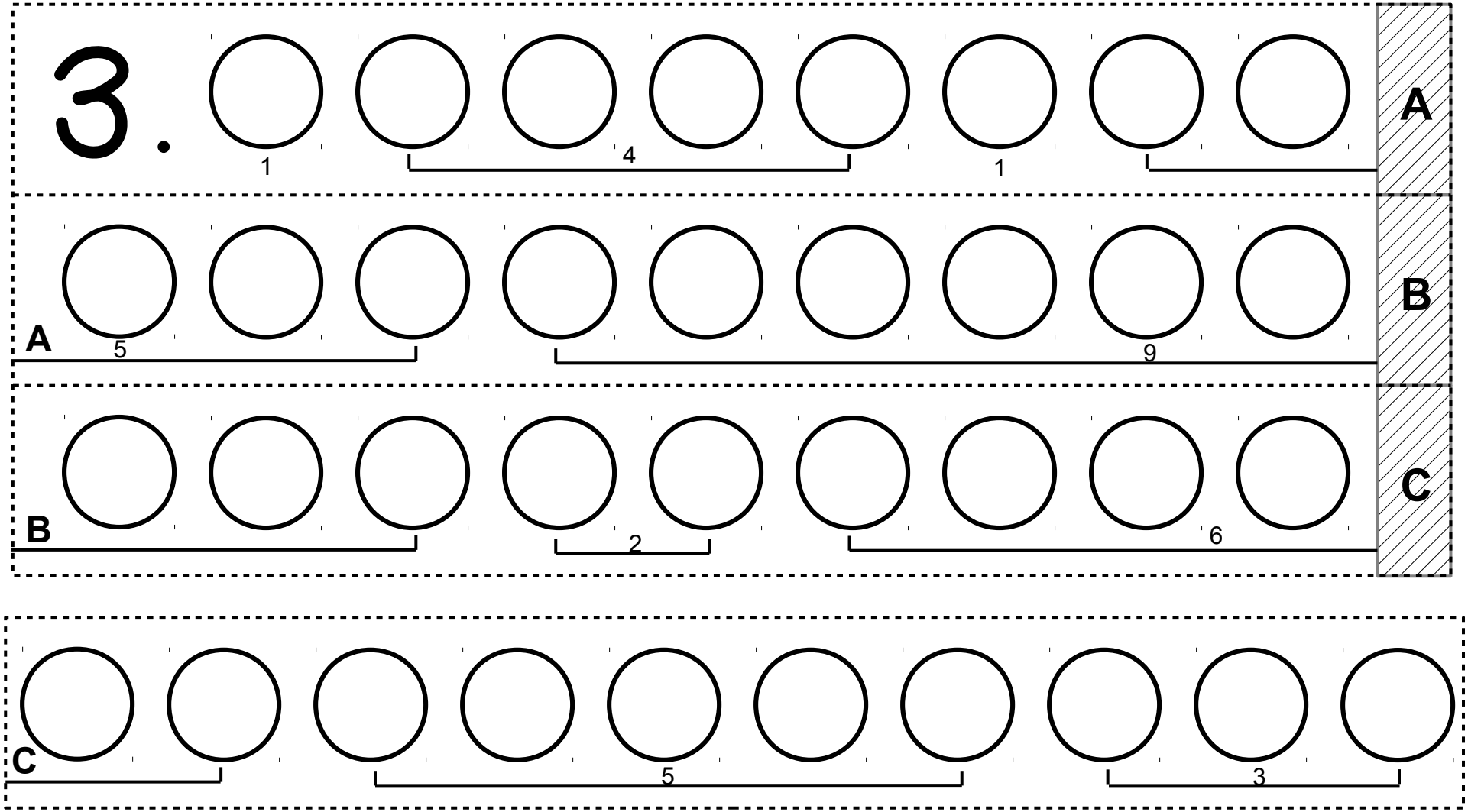
_____

for being a pi expert!

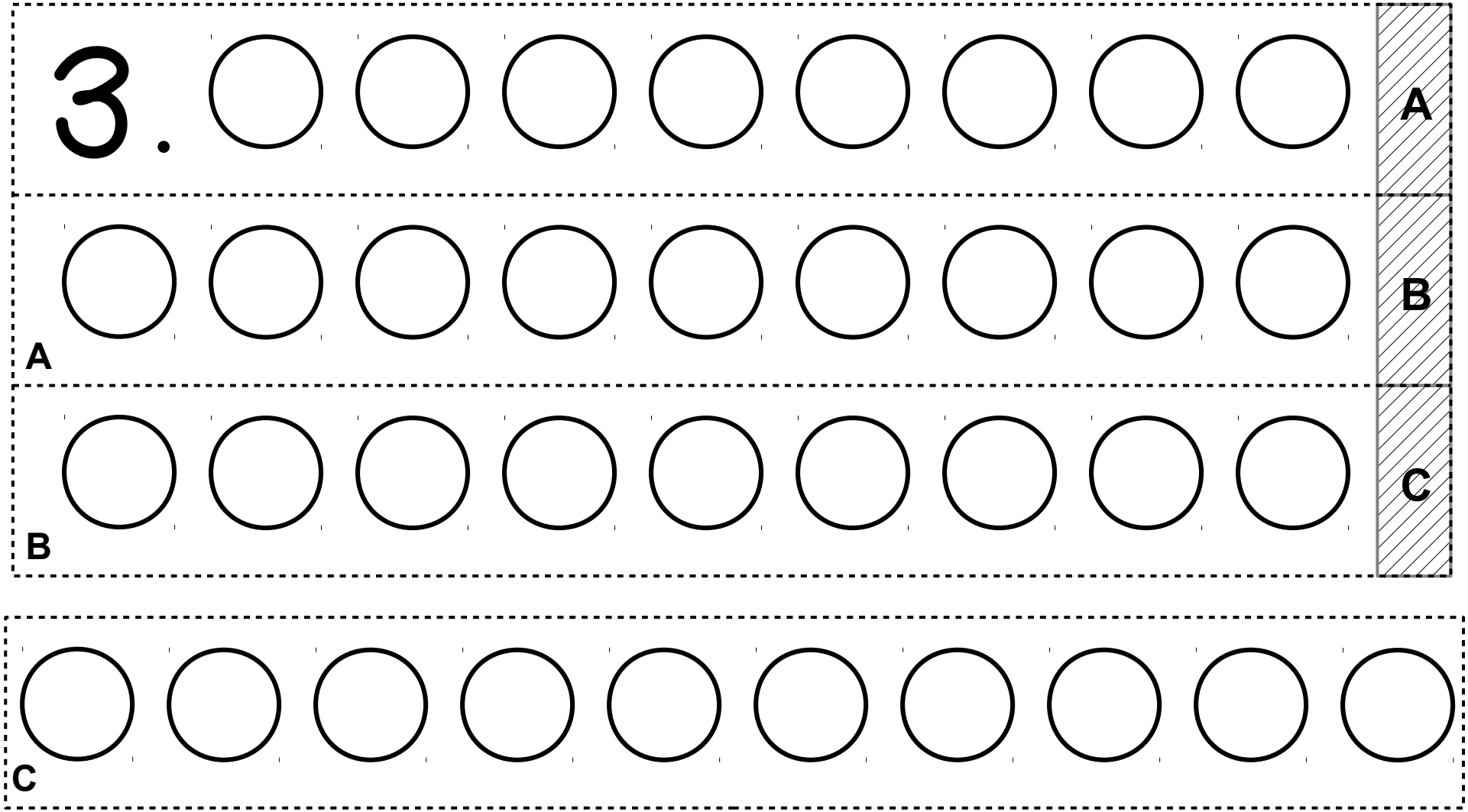
π

You've got pizzazz!

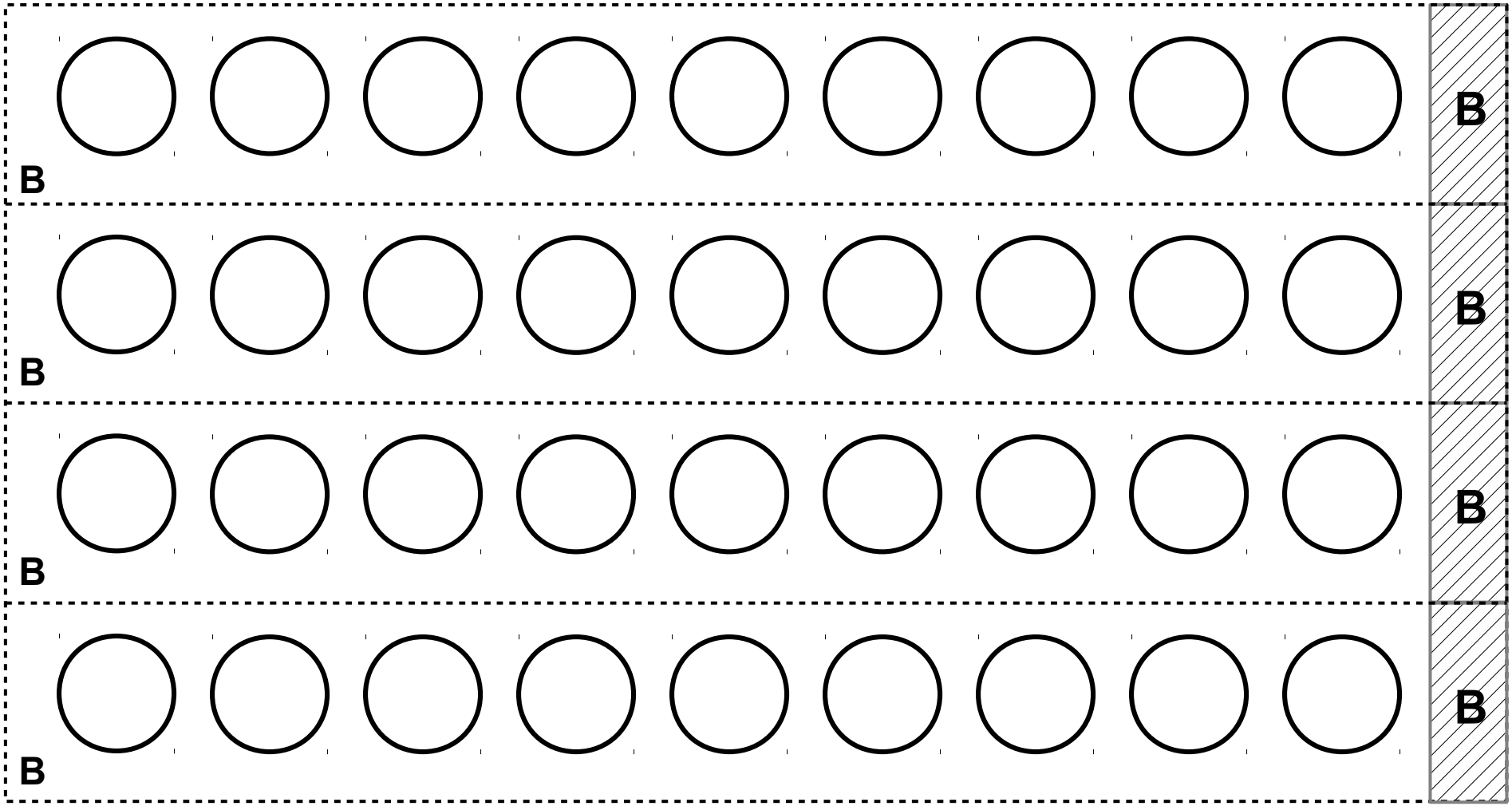
Pi day chain 3.141592653

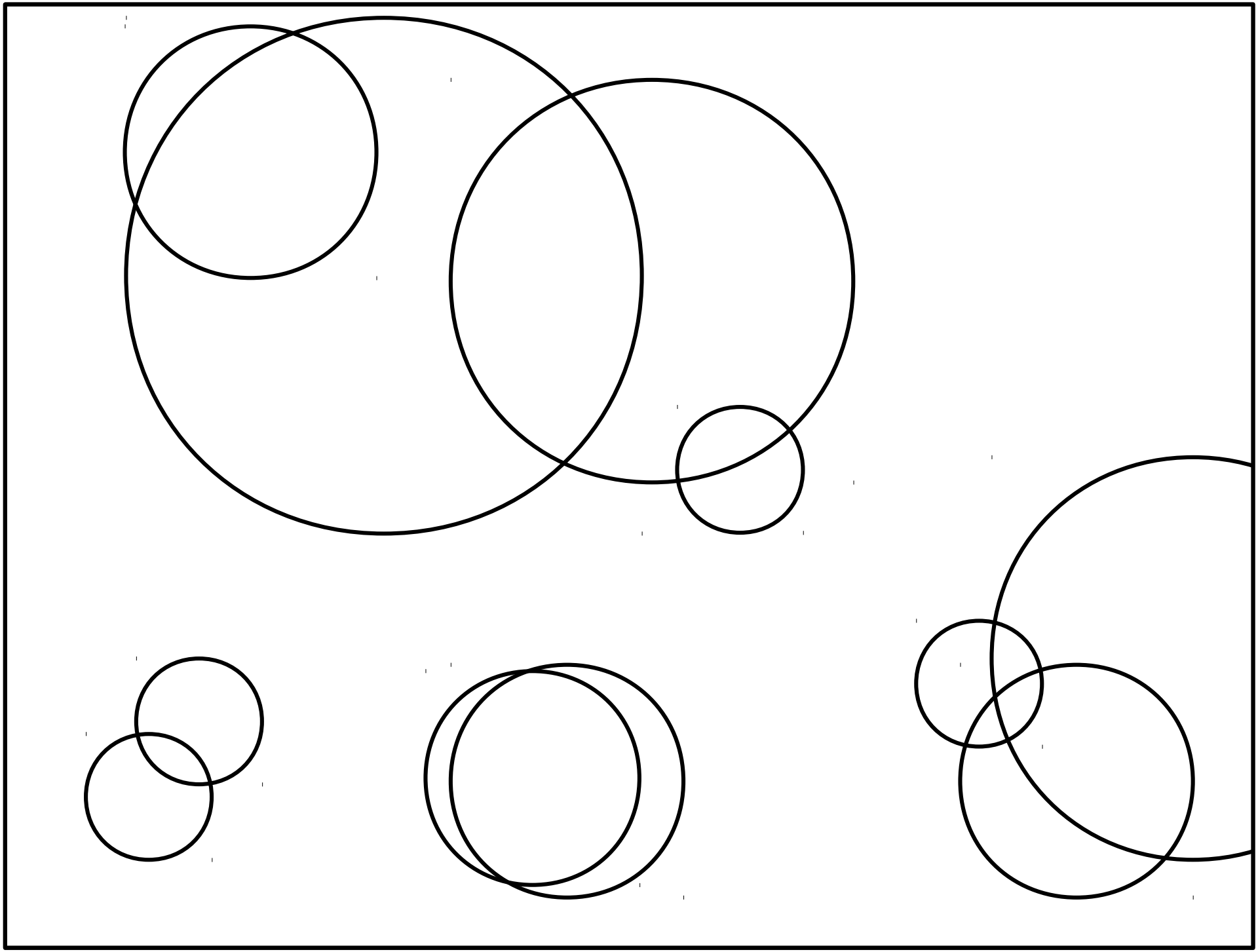


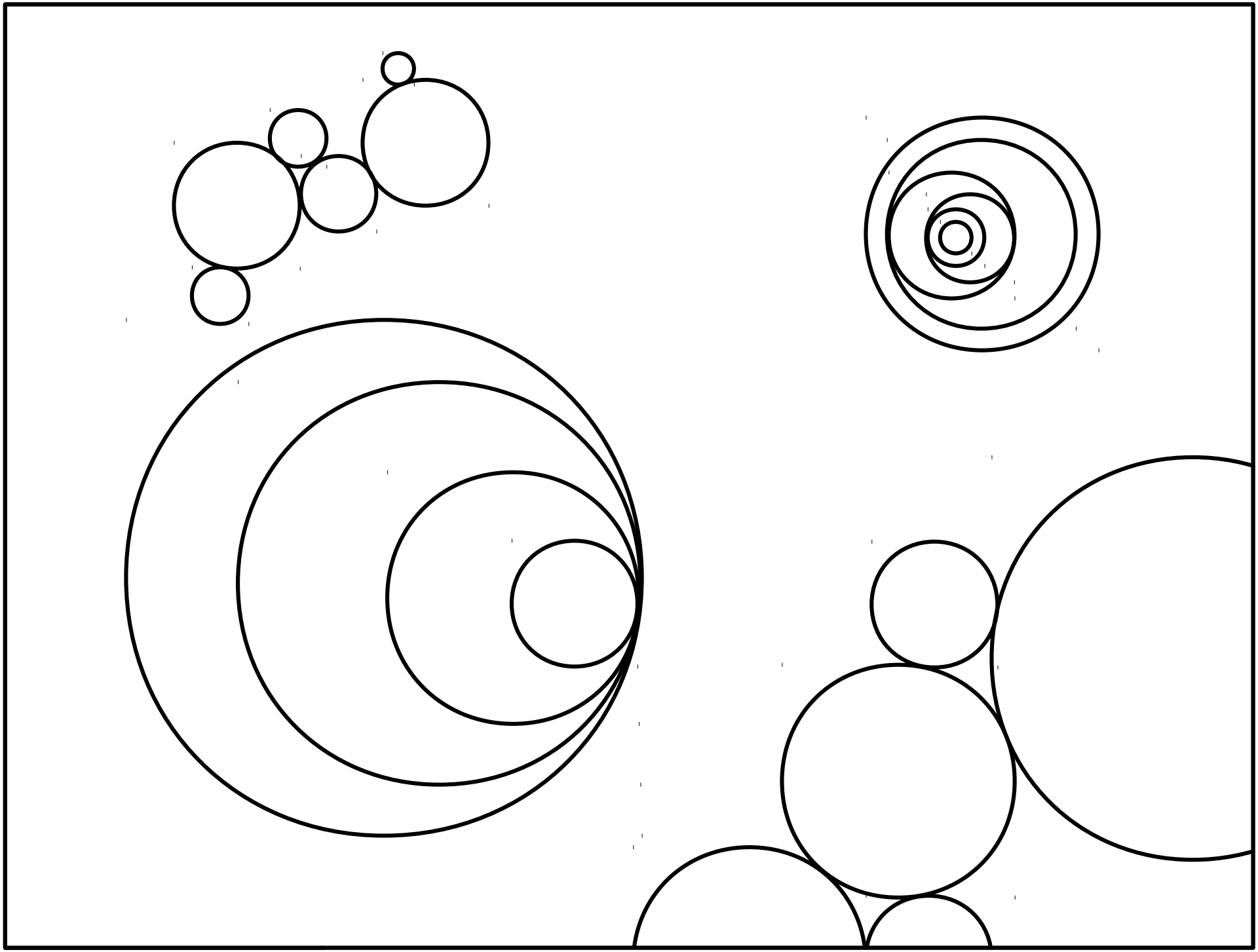
Pi day chain 3.141592653

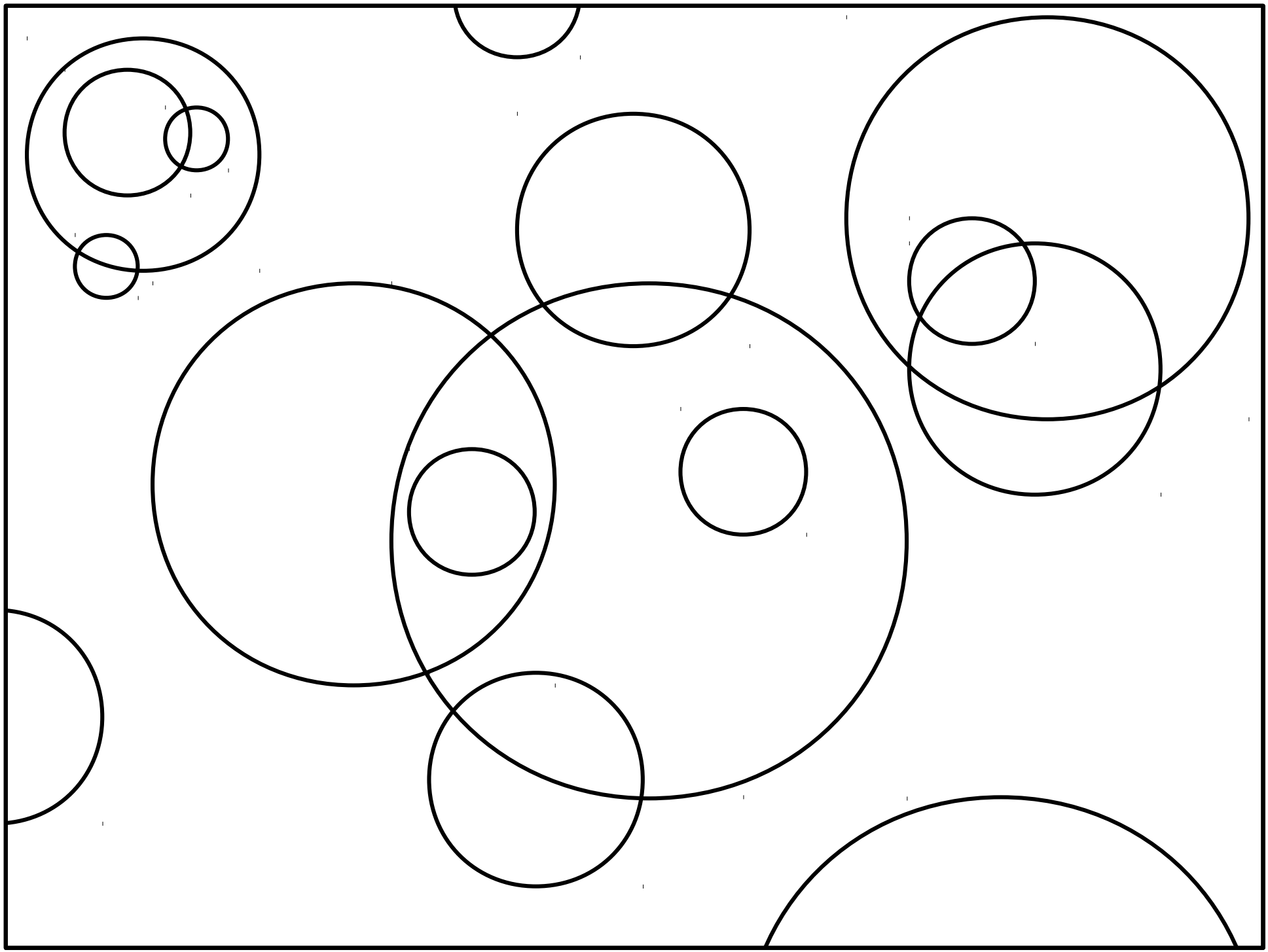


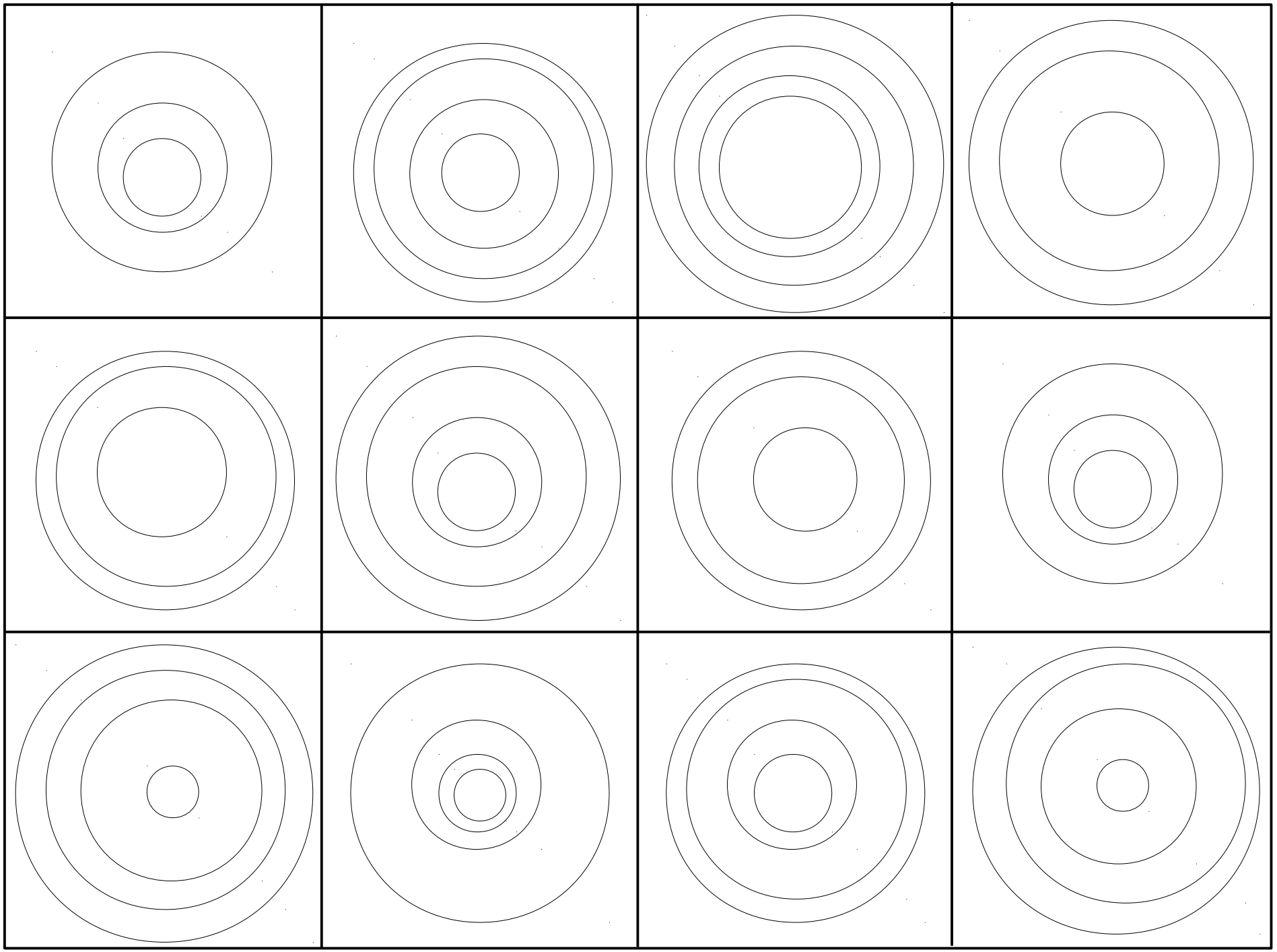
3.14159265358979323846

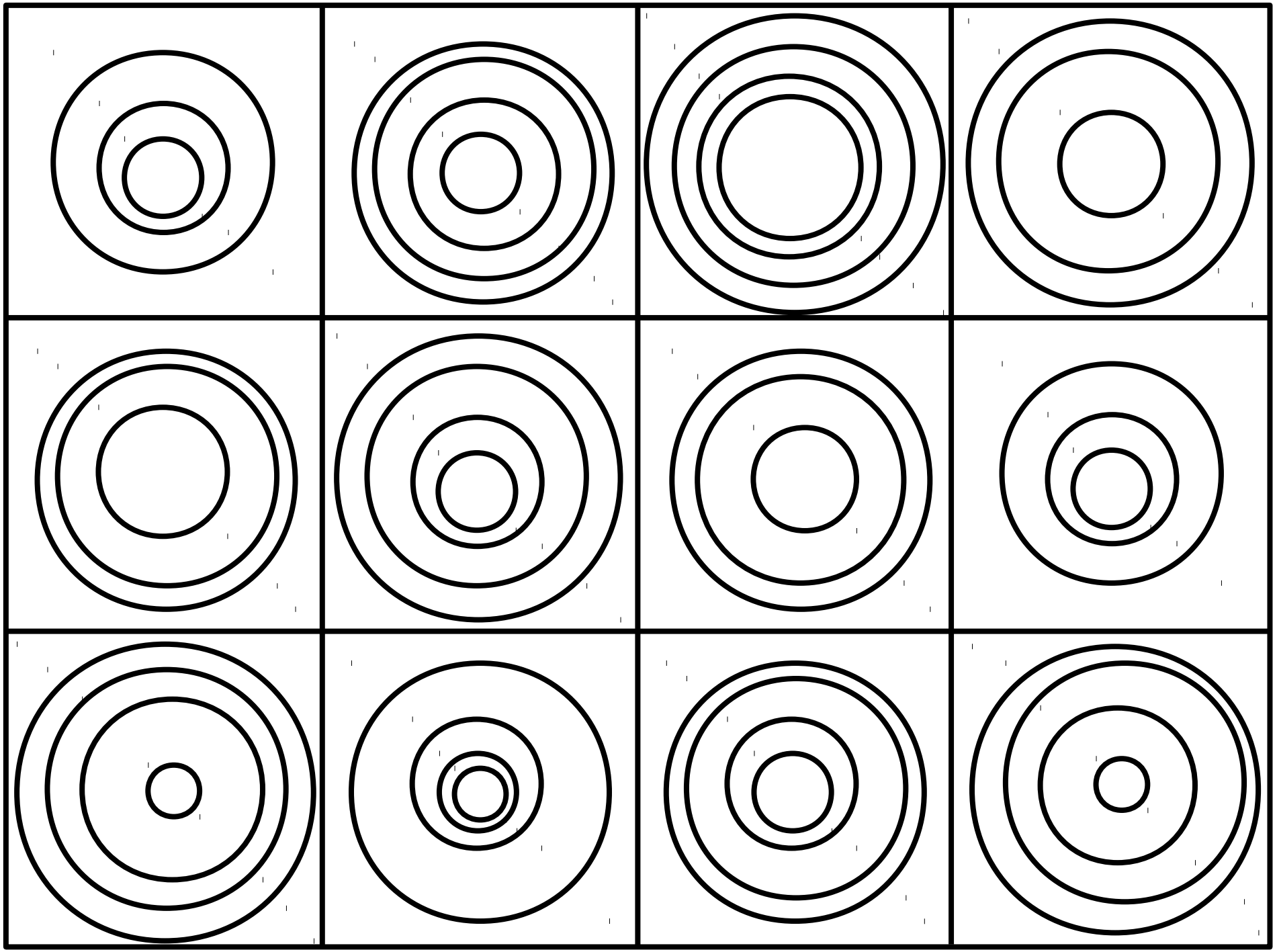






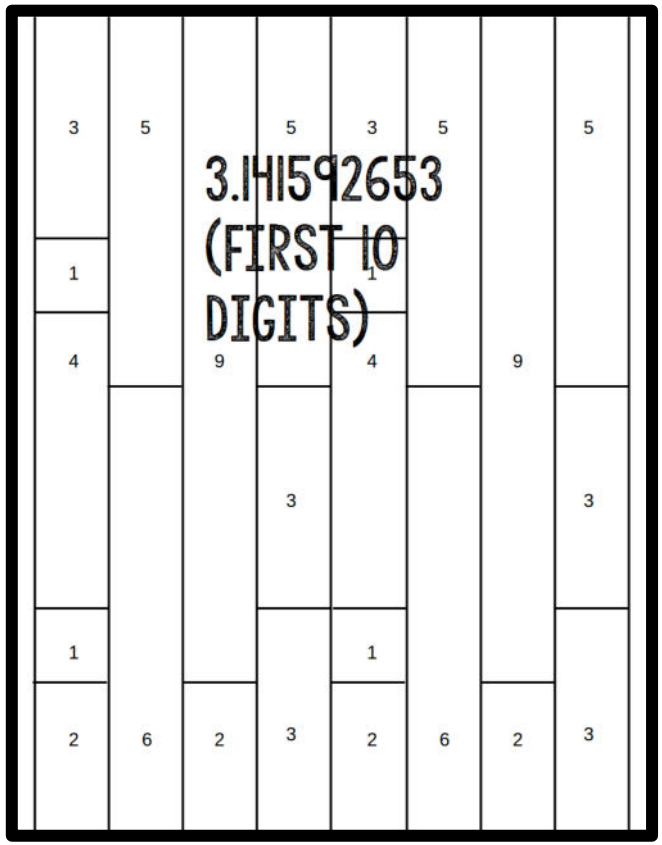


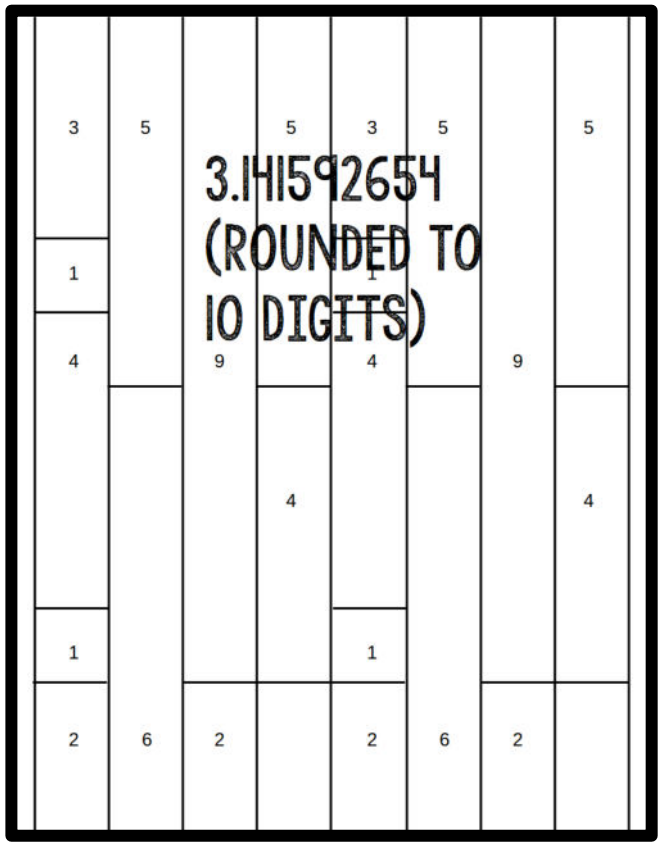




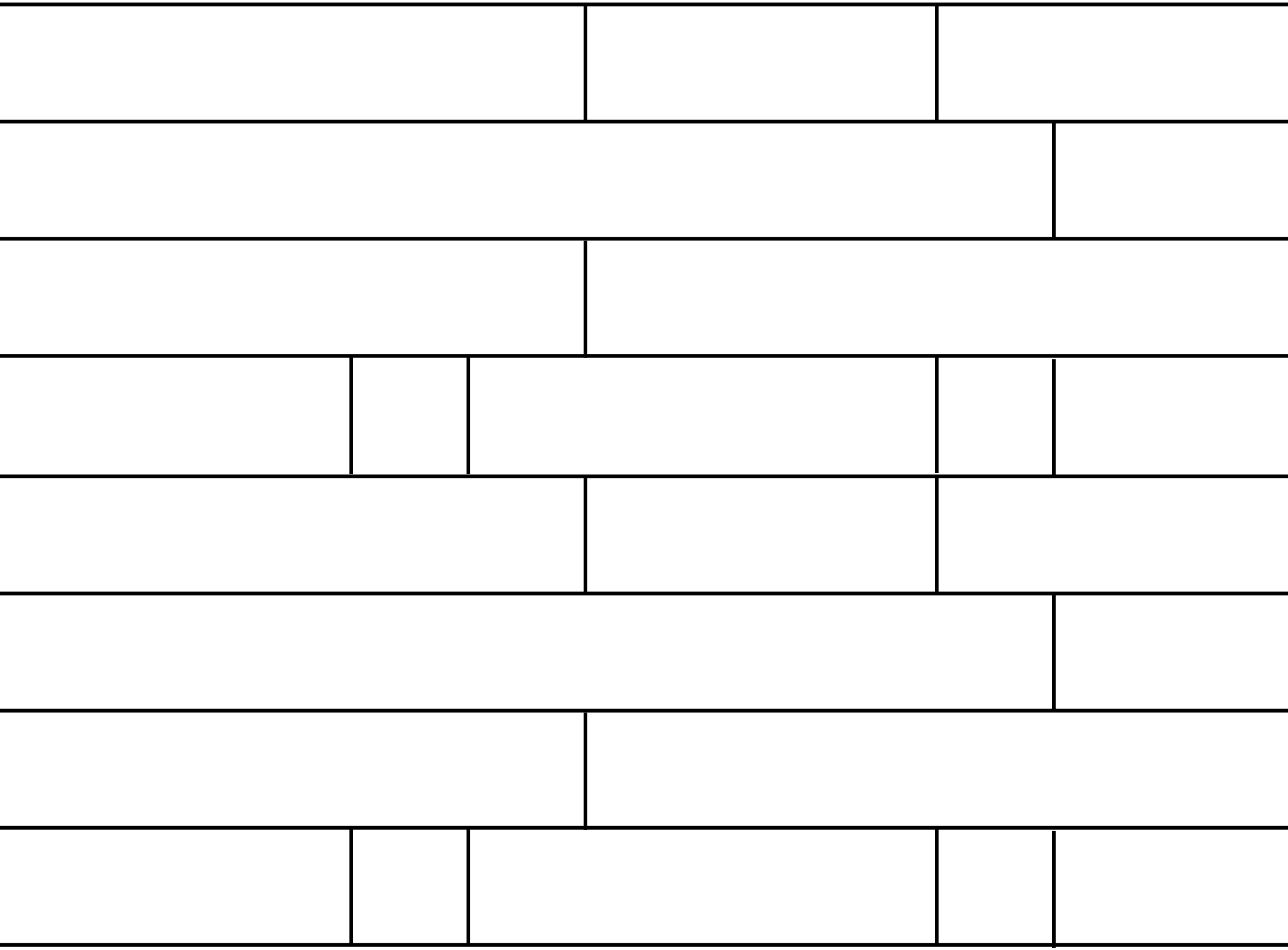
Pi Day Art Project 1

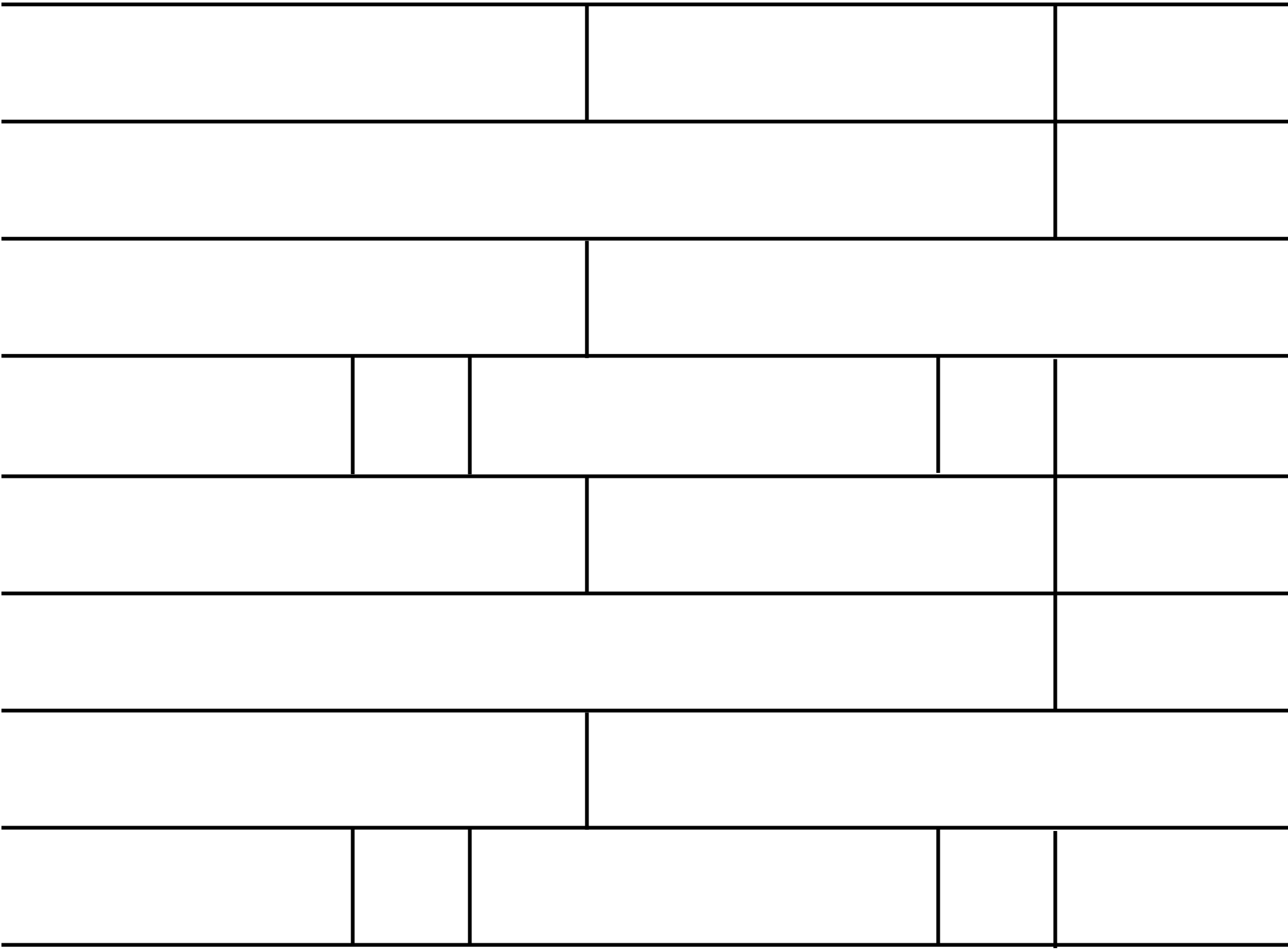
Strips of paper Pi art - use one of the templates provided or cut 1" wide strips in the first 10 digits (or rounded first 10 digits) of pi. This is very easy to prep ahead of time. Simply cut 1-inch strips. You can have your students measure out and cut the lengths.





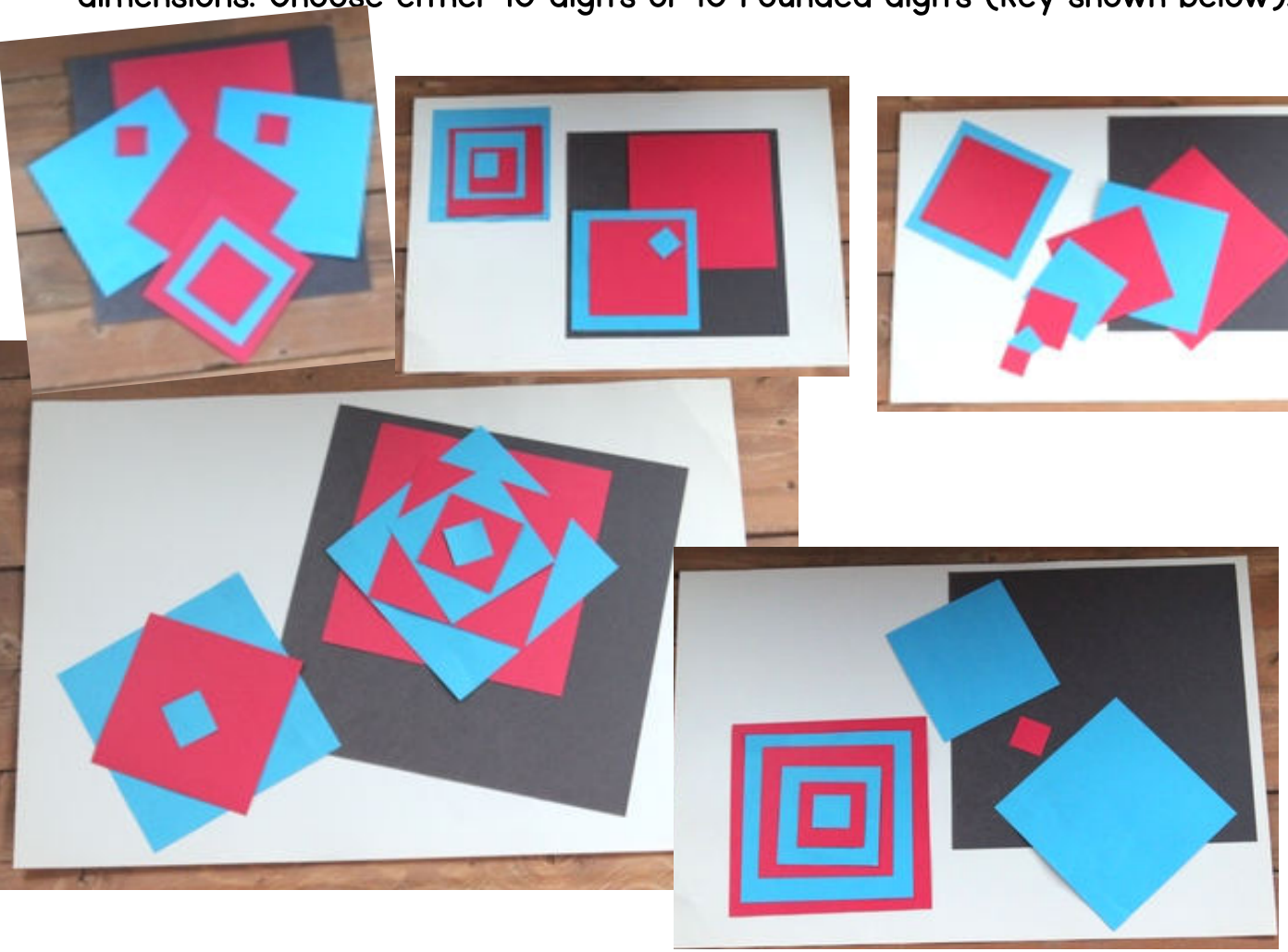
Pick one of the templates (on the following pages) or cut strips ahead of time and have your students measure to find the 10 pieces they need.

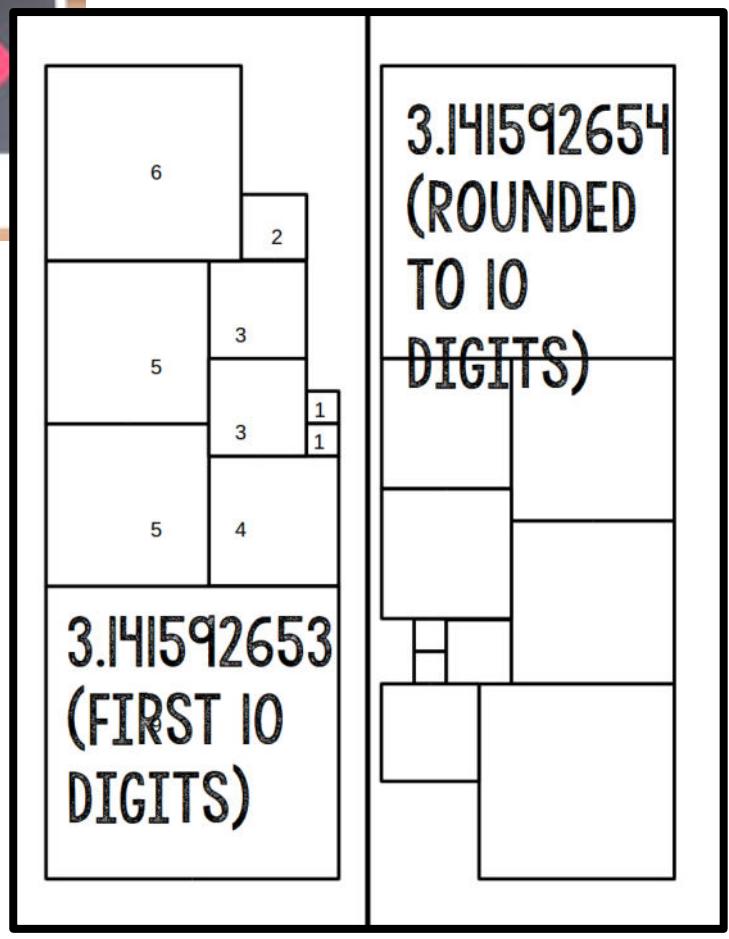


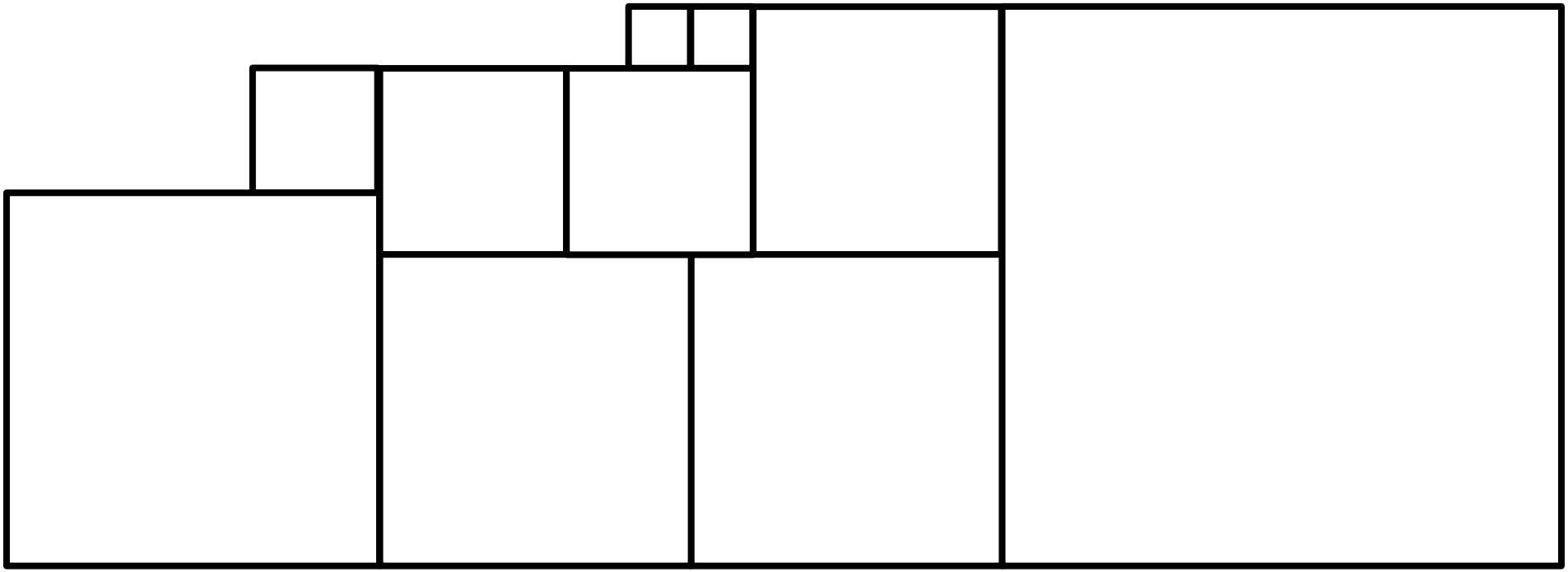


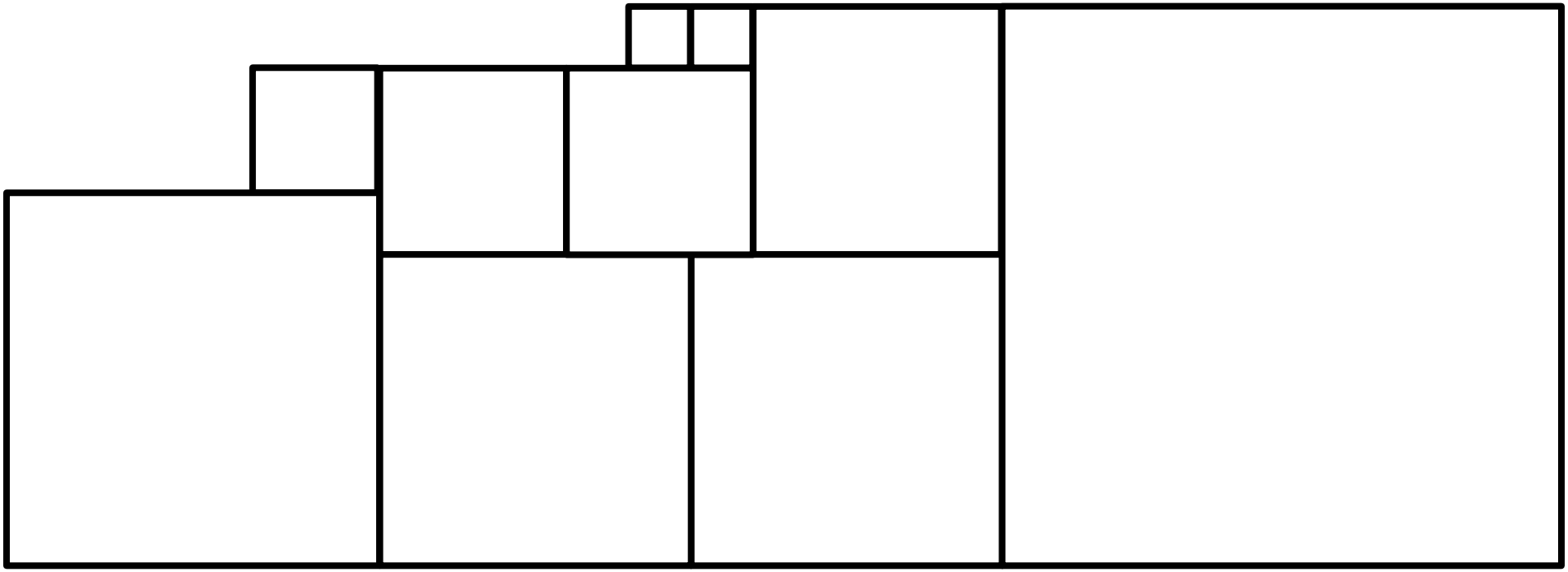
Pi Day Art Project 2

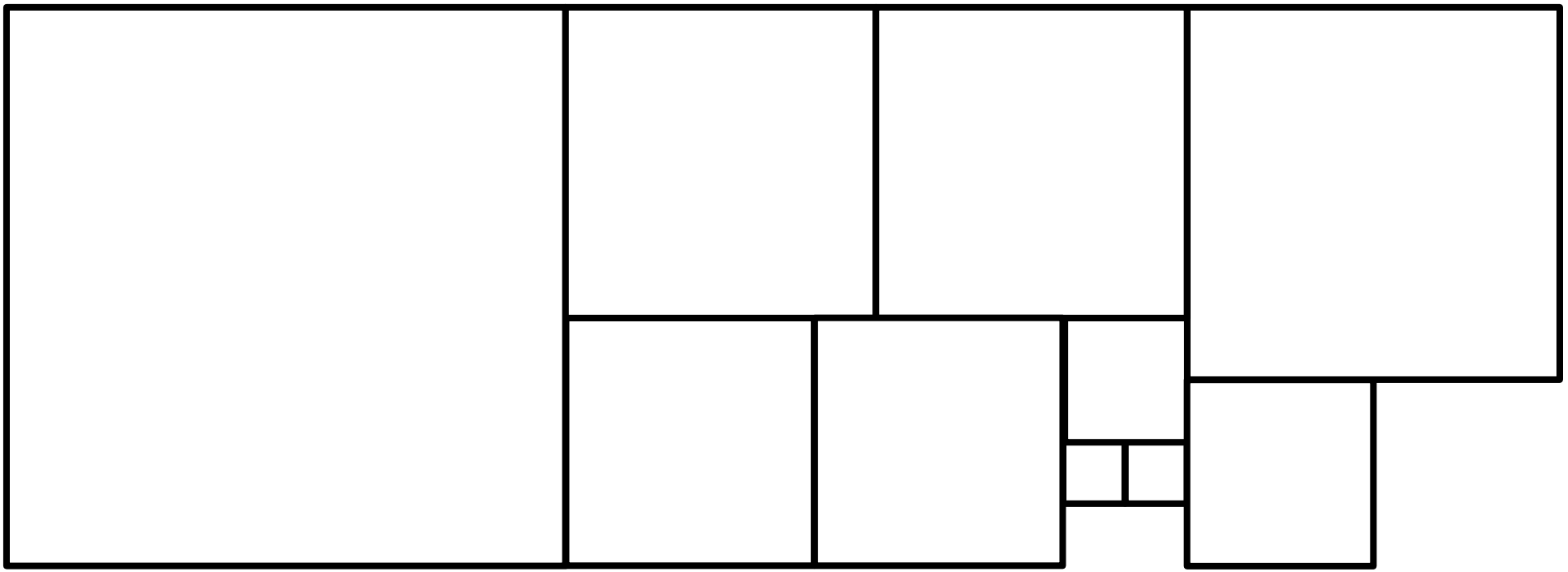
Squares of paper pi art! The images shown were made by cutting squares of paper in inch dimensions to 10 rounded digits of pi, and then mounted on a large piece of construction paper. If doing the project this way, you will need several legal or other large pieces of paper to make the 9 x 9 inch square. The other option is to use on of the templates provided, which has the squares in metric dimensions. Choose either 10 digits or 10 rounded digits (key shown below).

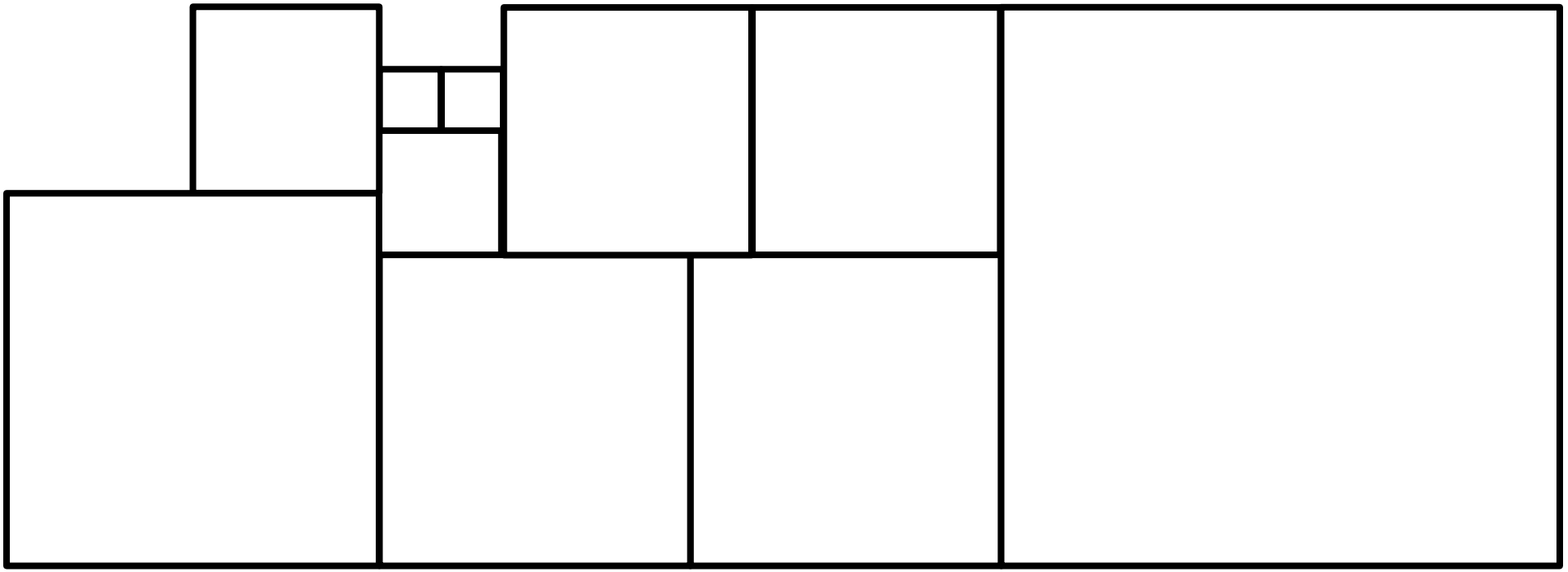








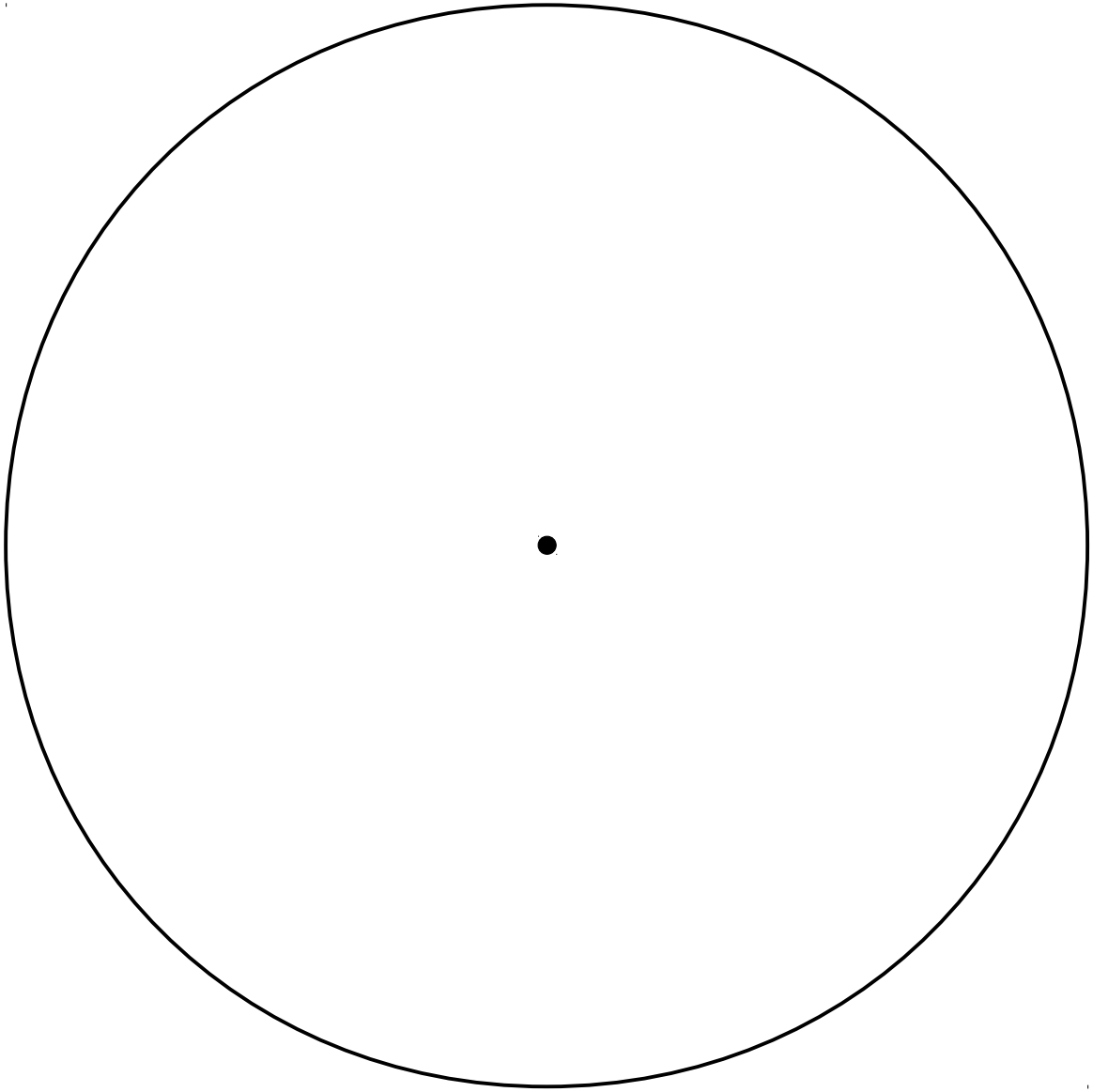




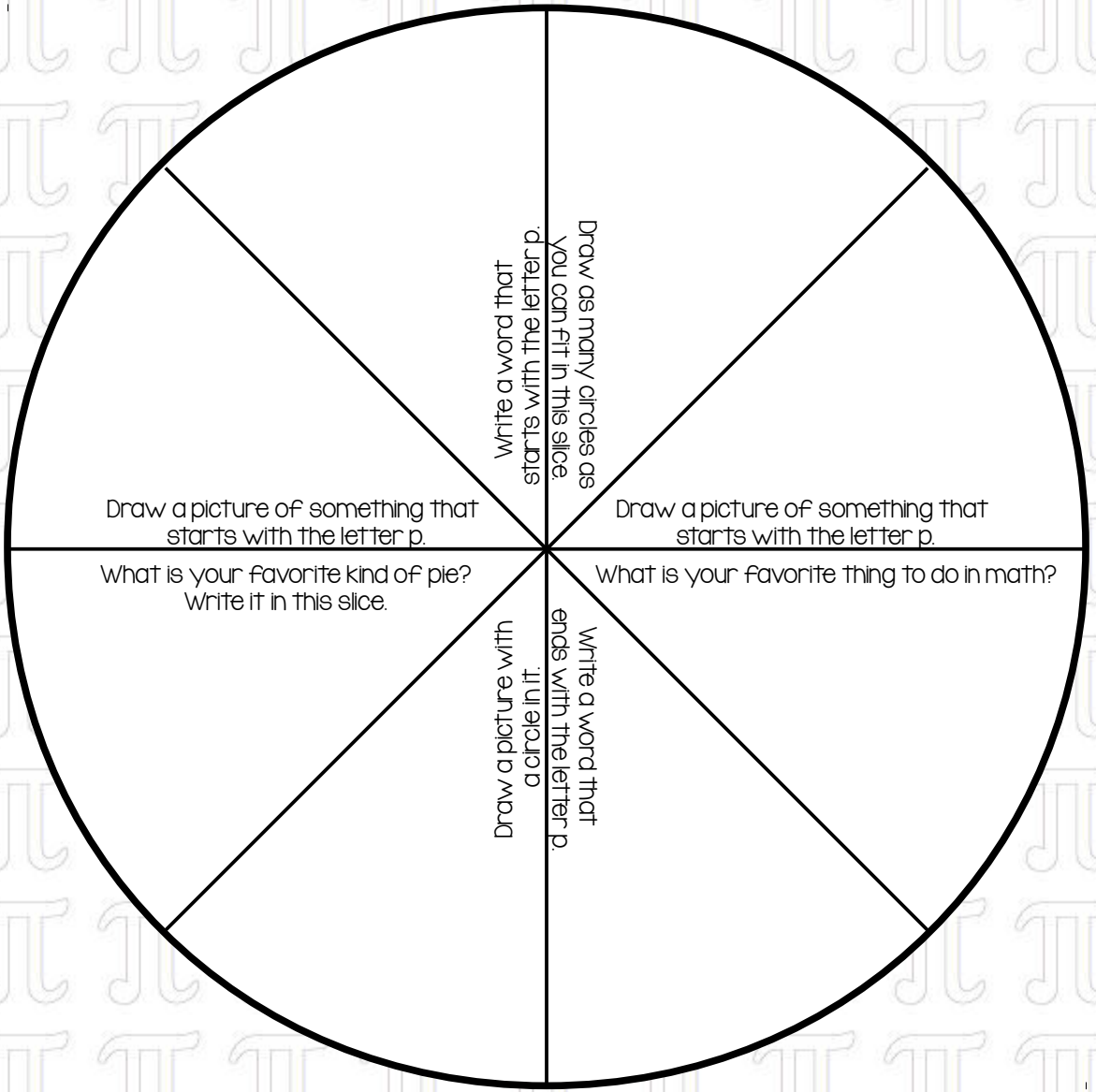
Favorite Pie!

Pie Flavor	Tally
Apple	
Banana Cream	
Cherry	
Chocolate	
Pecan	
Pumpkin	
Other	

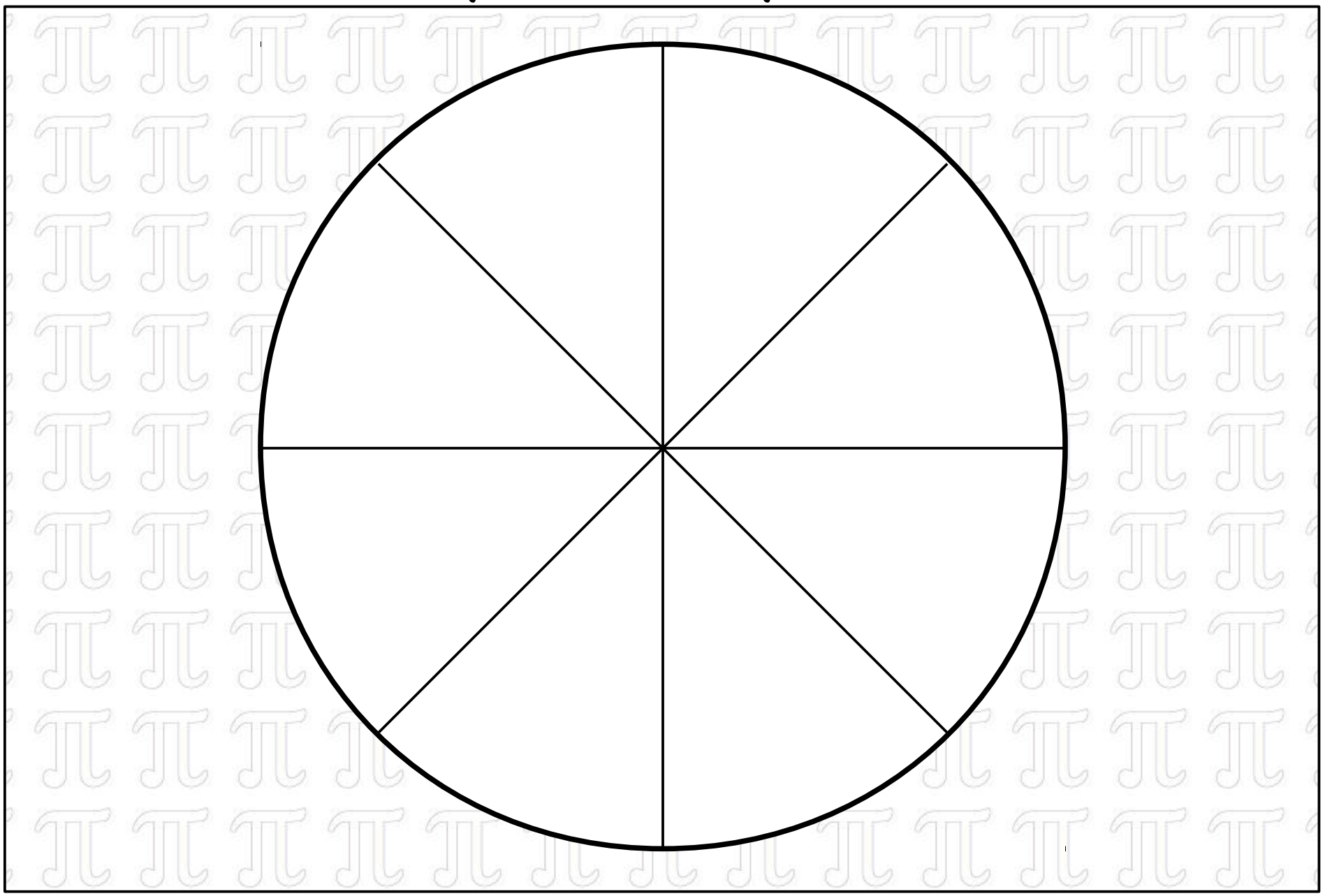
Favorite Pie Chart



My Pi Day Pie


Write a word that starts with the letter p.
Draw as many circles as you can fit in this slice.
Draw a picture of something that starts with the letter p.
Draw a picture of something that starts with the letter p.
What is your favorite kind of pie? Write it in this slice.
What is your favorite thing to do in math?
Draw a picture with a circle in it.
Write a word that ends with the letter p.

My Pi Day Pie



Name: _____

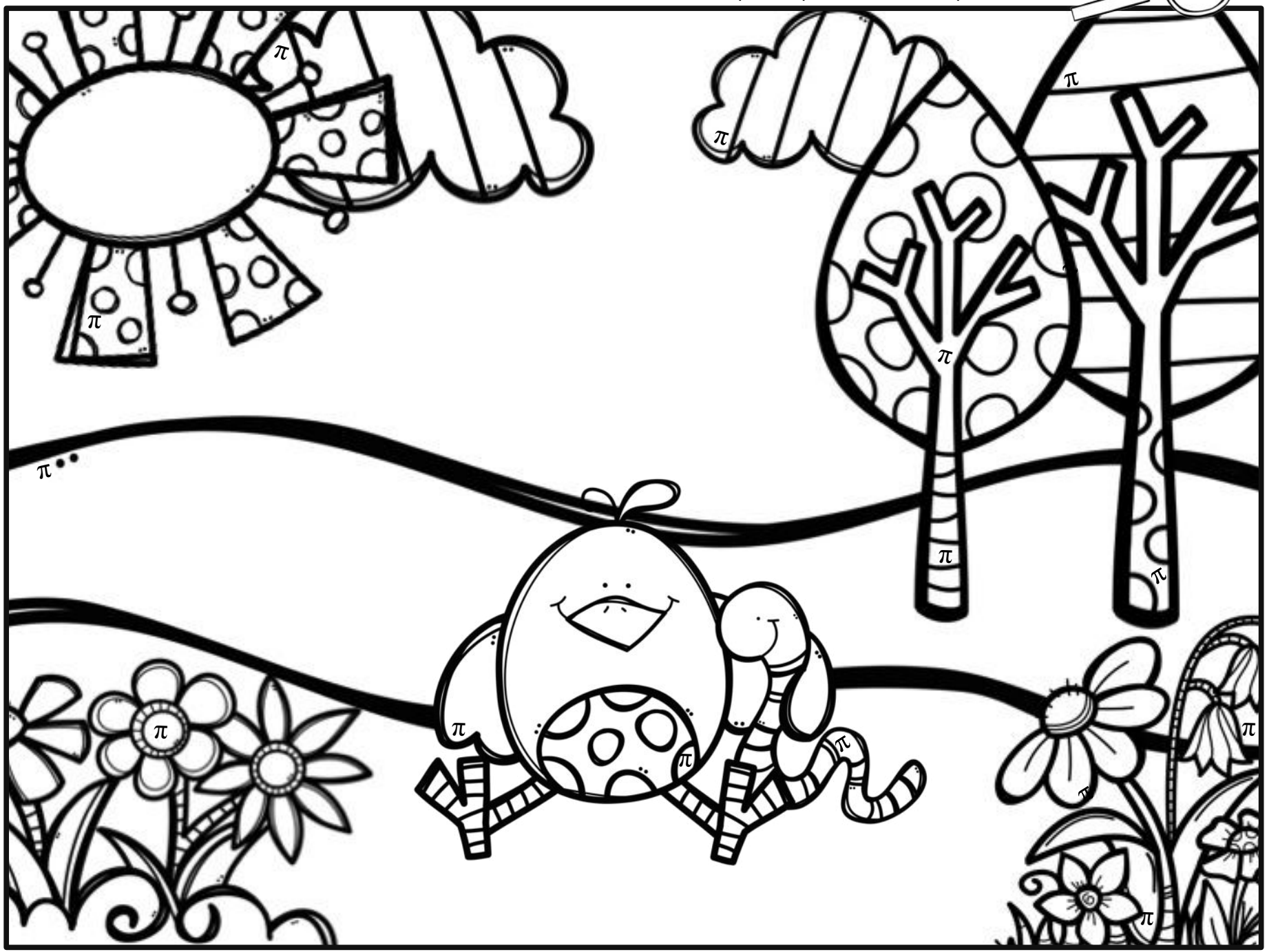
Pi Words

Directions: Replace every π with the letters "pi" instead. What word do you get?

1. πzza _____
2. πrate _____
3. πglet _____
4. πcture _____
5. πano _____
6. πcnic _____
7. sπll _____
8. πlgrim _____
9. coπlot _____
10. πgeon _____
11. πnk _____
12. troπcal _____

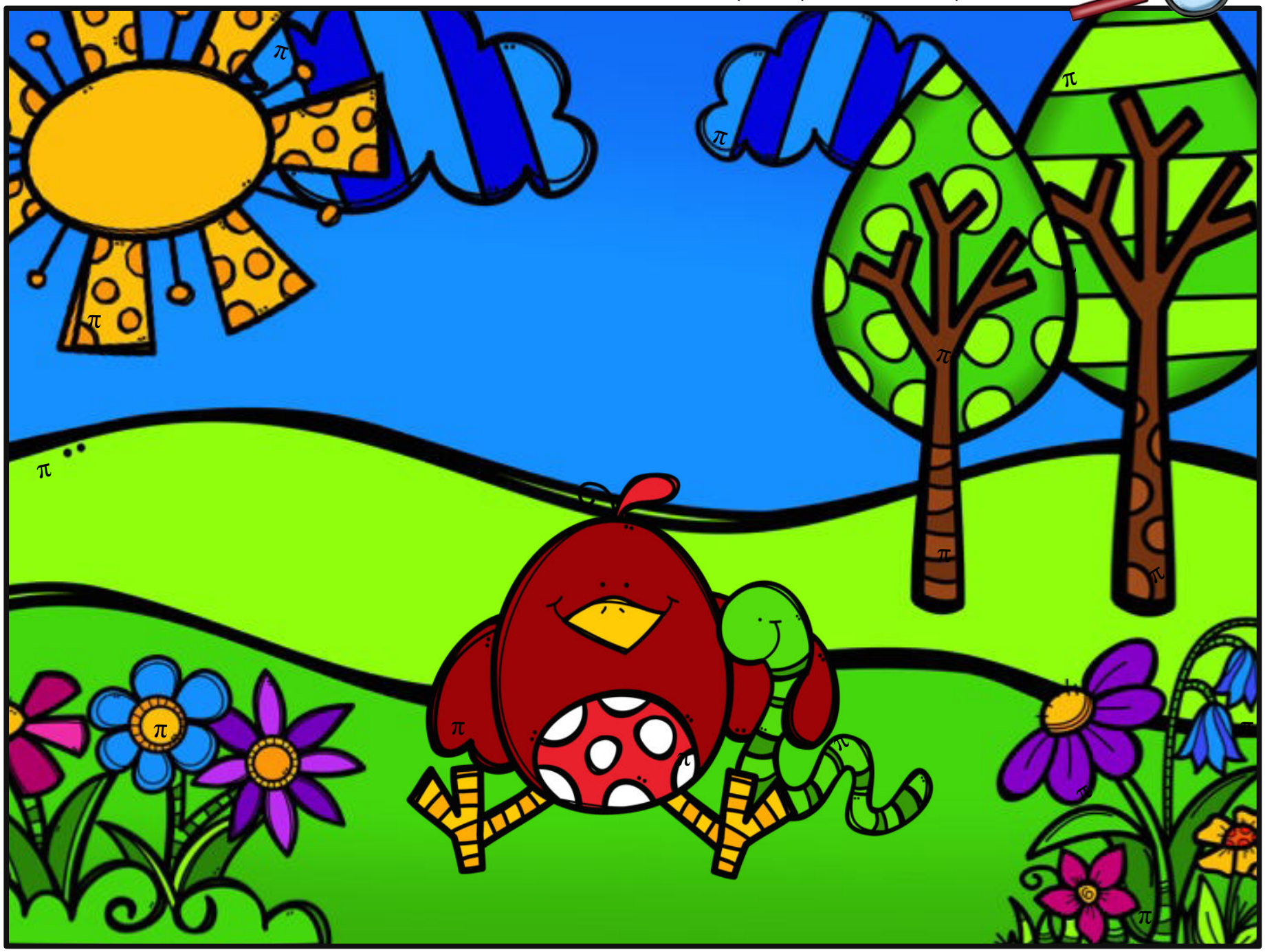
I SPY Pi!

Directions: Find and circle as many π symbols as you can.



I SPY Pi!

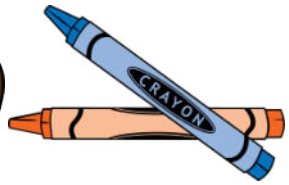
Directions: Find and circle as many π symbols as you can.

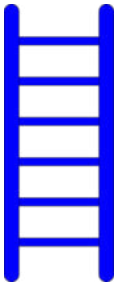
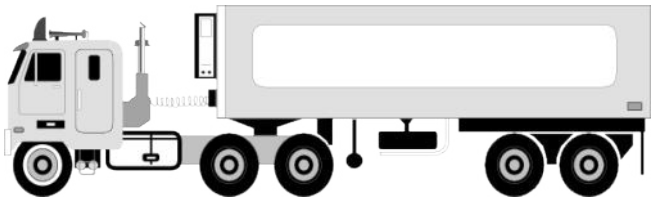
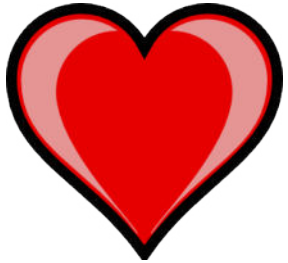


Name: _____

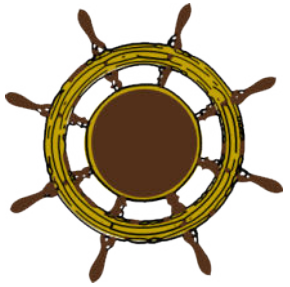
Circle Search

Directions: Circle and count all of the circles you can find!

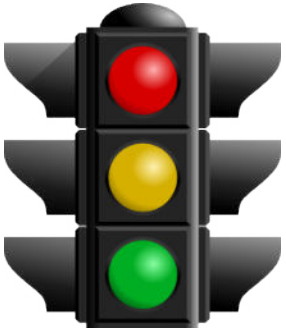













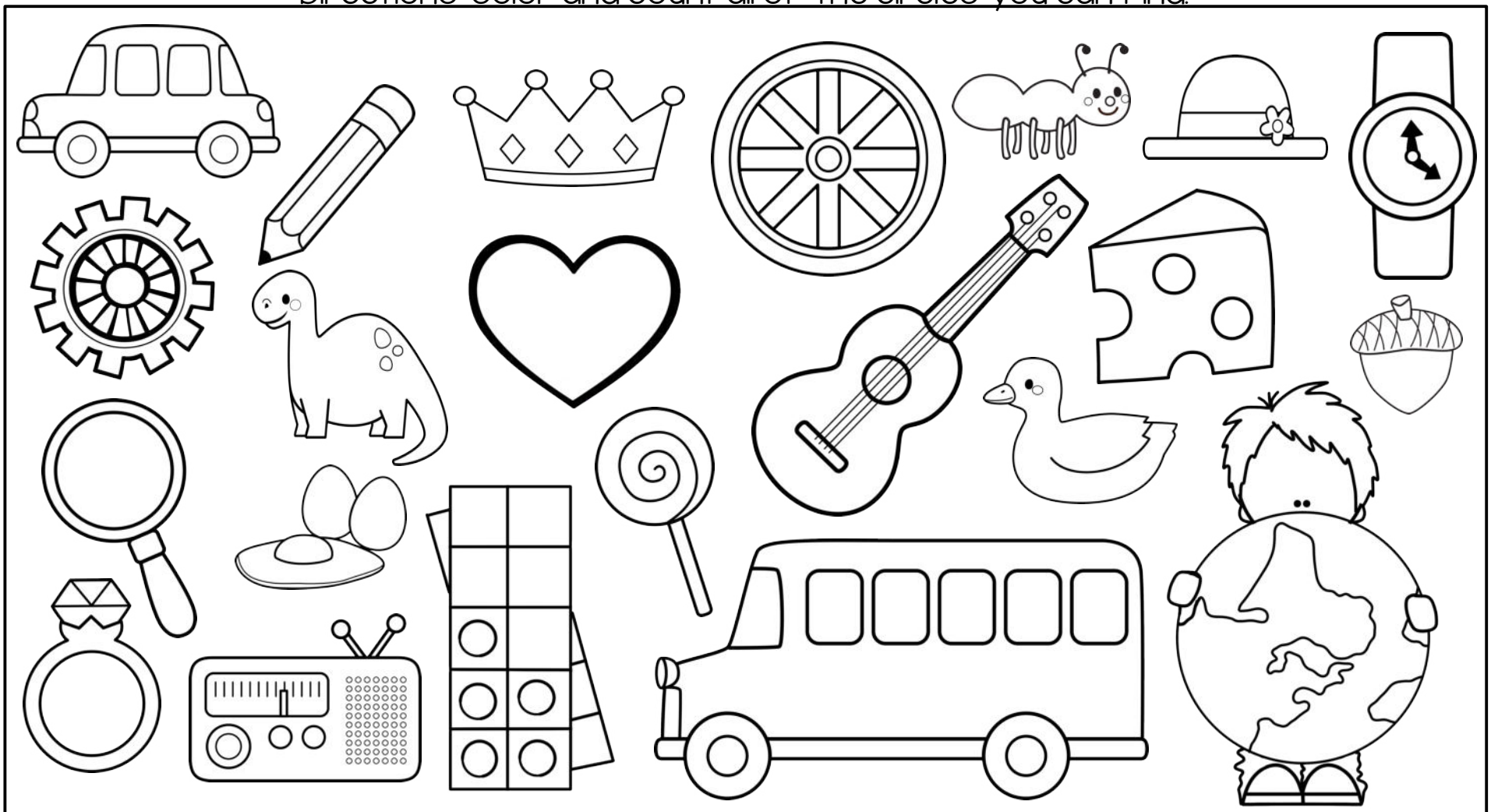



I found _____ circles.

Name: _____

Circle Search

Directions: Color and count all of the circles you can find!



I found _____ circles.

Name: _____

Circle Search

Directions: Search for all of the circles you can find in your classroom and record them below.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Name: _____

Pi Rhyming

Directions: Shade the rectangles of the words that rhyme with pi.

try	high	tie	sly	fry	dry
eye	happy	pry	cake	by	is
buy	cry	lie	dog	sty	hill
hi	silly	way	car	my	what
fly	baby	the	low	why	ant
I	red	you	guy	bye	July

LOGIC PUZZLES

These puzzles are presented in increasing difficulty. Choose the puzzles that make the most sense for your students. If you are using these with early readers, you may want to pair off in teams of strong/early reader or use with reading buddies. There are two types of problems – reading with logic and math with logic (sum across or down).

The last problem, circular logic 3, is extremely challenging. Save this for either groups or leave it up for the week to let your students try to come up with the answer. You may wish to give hints, such as all of the answers are multiples of 5, or tell them which image is the largest or smallest number. If it is still too challenging, make it a given that the penny = 5.

Circle Puzzle

Name:_____

Everyone is looking for circular objects in the room. After recording what they find, each person gets to keep one object they spotted. Yasmin spotted the clock face and a dime. Neil spotted the wheel and the clock face. Trong only saw the clock face.

Neil			
Yasmin			
Trong			

Which object did each person get to keep?

Neil _____

Yasmin _____

Trong _____

Circle Puzzle

Name:_____

Everyone is looking for circular objects in the room. After recording what they find, each person gets to keep one object they spotted. Yasmin spotted the clock face and a dime. Neil spotted the wheel and the clock face. Trong only saw the clock face.

Neil			
Yasmin			
Trong			

Which object did each person get to keep?

Neil _____

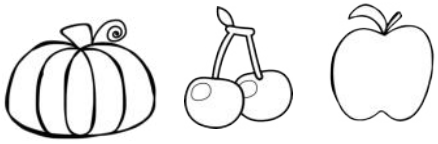
Yasmin _____

Trong _____

Pie Puzzle 1

Name:_____

There are three different kinds of pie at The Pie Platter Bakery. Each person gets a different kind of pie. Charlie only likes cherry pies. Marie will eat any kind of pie except for pumpkin. George likes cherry and pumpkin pie.



George			
Charlie			
Marie			

Which type of pie does each person eat?

George _____

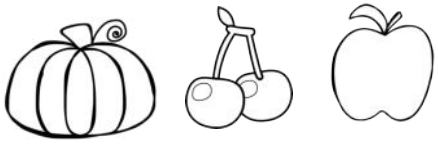
Charlie _____

Marie _____

Pie Puzzle 1

Name:_____

There are three different kinds of pie at The Pie Platter Bakery. Each person gets a different kind of pie. Charlie only likes cherry pies. Marie will eat any kind of pie except for pumpkin. George likes cherry and pumpkin pie.



George			
Charlie			
Marie			

Which type of pie does each person eat?

George _____

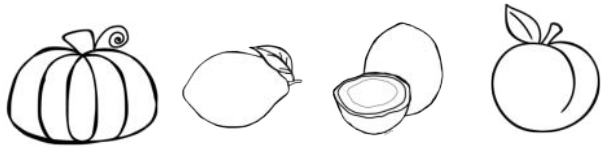
Charlie _____

Marie _____

Pie Puzzle 2

Name:_____

There are four different kinds of pie at The Big Belly Bakery. Each person gets a different kind of pie. Mark likes all pie except lemon meringue and coconut cream pie. Rashida only likes pumpkin pie. Bella likes peach and lemon meringue pie. Kevin likes coconut cream pie.



Rashida				
Mark				
Bella				
Kevin				

Which type of pie does each person eat?

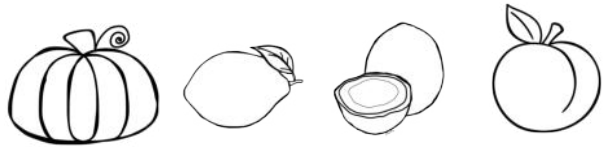
Rashida_____ Bella _____

Mark _____ Kevin _____

Pie Puzzle 2

Name:_____

There are four different kinds of pie at The Big Belly Bakery. Each person gets a different kind of pie. Mark likes all pie except lemon meringue and coconut cream pie. Rashida only likes pumpkin pie. Bella likes peach and lemon meringue pie. Kevin likes coconut cream pie.



Rashida				
Mark				
Bella				
Kevin				

Which type of pie does each person eat?

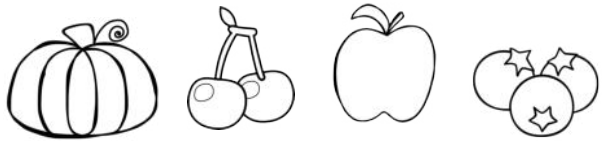
Rashida_____ Bella _____

Mark _____ Kevin _____

Pie Puzzle 3

Name:_____

There are four different kinds of pie at The Pie Platter Bakery. Each person gets a different kind of pie. Charlie only likes blueberry pies. Marie will eat any kind of pie except for pumpkin. George likes cherry and pumpkin pie. Kelsea likes pumpkin and blueberry pie.



George				
Charlie				
Marie				
Kelsea				

Which type of pie does each person eat?

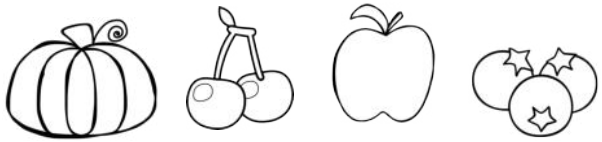
George _____ Marie _____

Charlie _____ Kelsea _____

Pie Puzzle 3

Name:_____

There are four different kinds of pie at The Pie Platter Bakery. Each person gets a different kind of pie. Charlie only likes blueberry pies. Marie will eat any kind of pie except for pumpkin. George likes cherry and pumpkin pie. Kelsea likes pumpkin and blueberry pie.



George				
Charlie				
Marie				
Kelsea				

Which type of pie does each person eat?

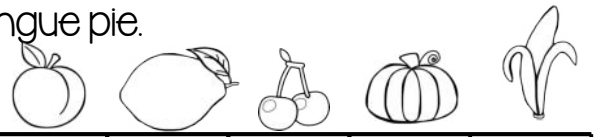
George _____ Marie _____

Charlie _____ Kelsea _____

Pie Puzzle 4

Name:_____

There are five different kinds of pie at The Big Belly Bakery. Each person gets a different kind of pie. Iggy likes lemon meringue and banana cream pie. Jamie likes cherry and lemon meringue pie. Megan likes pumpkin and banana cream pie. Bryce will only eat pies that Megan doesn't like. Sarah only eats lemon meringue pie.



Jamie					
Sarah					
Iggy					
Megan					
Bryce					

Which type of pie does each person eat?

Jamie_____ Megan _____

Sarah_____ Bryce _____

Iggy _____

Pie Puzzle 4

Name:_____

There are five different kinds of pie at The Big Belly Bakery. Each person gets a different kind of pie. Iggy likes lemon meringue and banana cream pie. Jamie likes cherry and lemon meringue pie. Megan likes pumpkin and banana cream pie. Bryce will only eat pies that Megan doesn't like. Sarah only eats lemon meringue pie.

Jamie					
Sarah					
Iggy					
Megan					
Bryce					

Which type of pie does each person eat?

Jamie_____ Megan _____

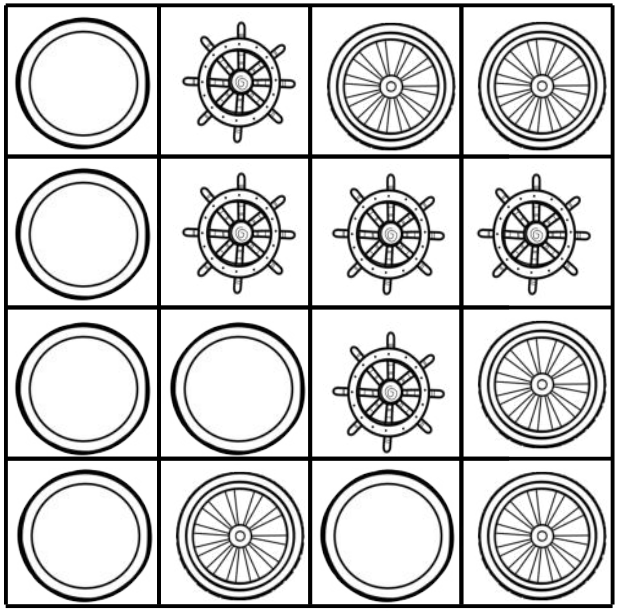
Sarah_____ Bryce _____

Iggy _____

Circular Logic 1

Name:_____

Directions: Find the value of each object.



13
17
12
10

8 13 15 14

= _____

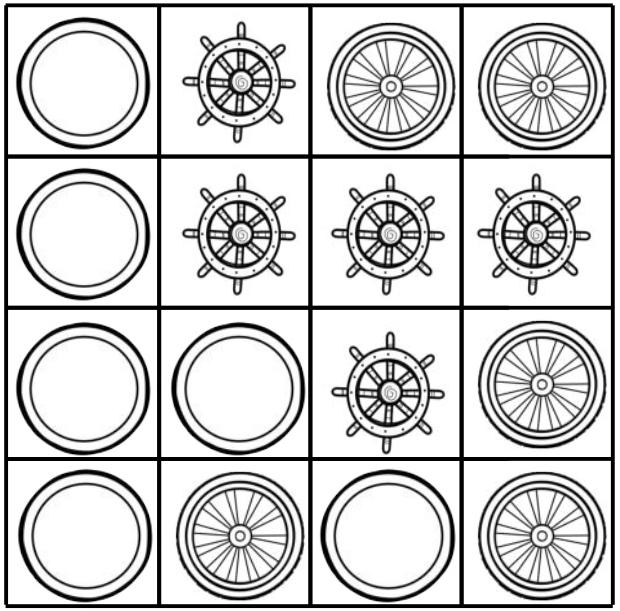
= _____

= _____

Circular Logic 1

Name:_____

Directions: Find the value of each object.



13
17
12
10

8 13 15 14

= _____

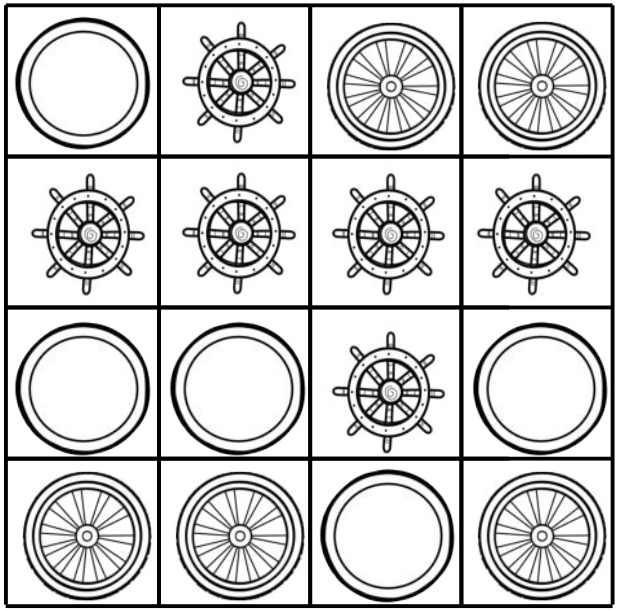
= _____

= _____

Circular Logic 2

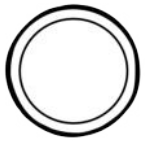
Name:_____

Directions: Find the value of each object.



16
16
34
13

25 19 19 16

 = _____

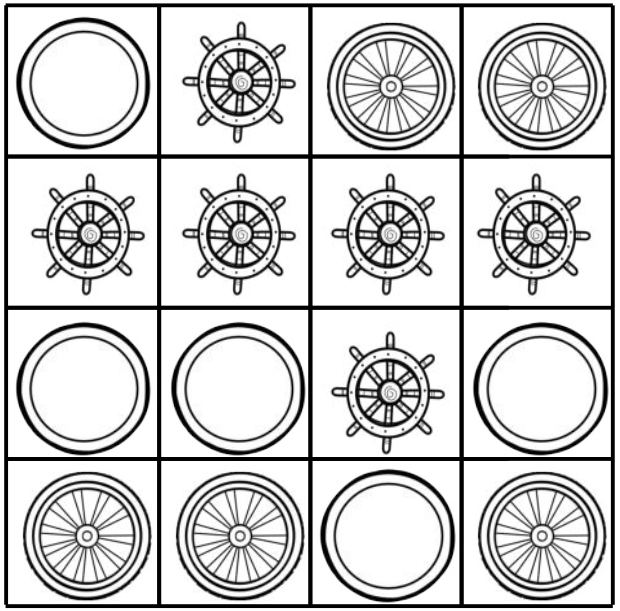
 = _____

 = _____

Circular Logic 2

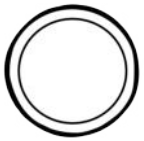
Name:_____

Directions: Find the value of each object.



16
16
34
13

25 19 19 16

 = _____

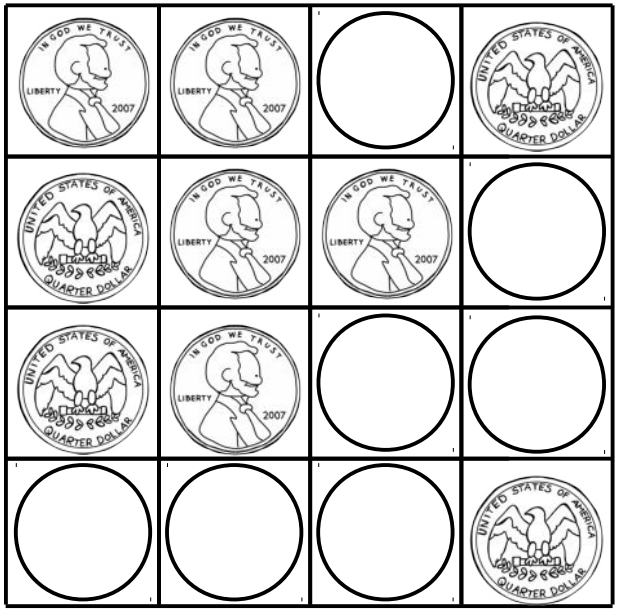
 = _____

 = _____

Circular Logic 3

Name:_____

Directions: Find the value of each object.



40

40

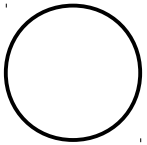
55

70

45 35 65 60

 = _____

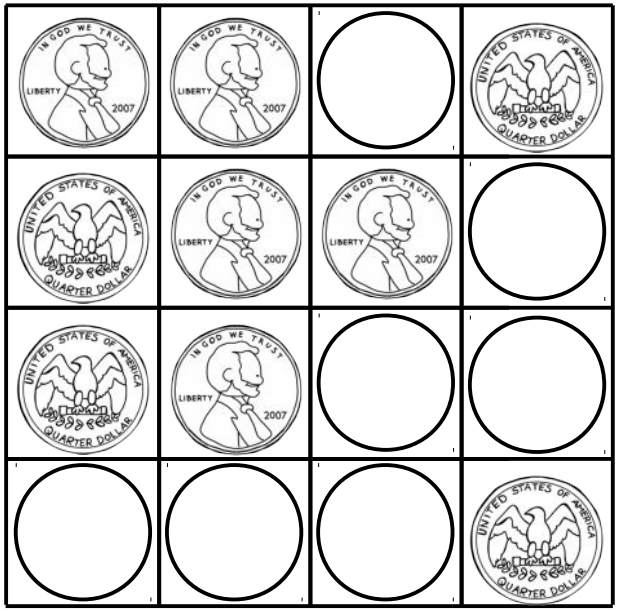
 = _____

 = _____

Circular Logic 3

Name:_____

Directions: Find the value of each object.



40

40

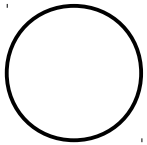
55

70

45 35 65 60

 = _____

 = _____

 = _____

3.14159265358979323846264338327950288419716939937510582097494459230781640628620899862803482534211706798214808651328230664709384460955058222

PI DAY

CROWN

Craftivity

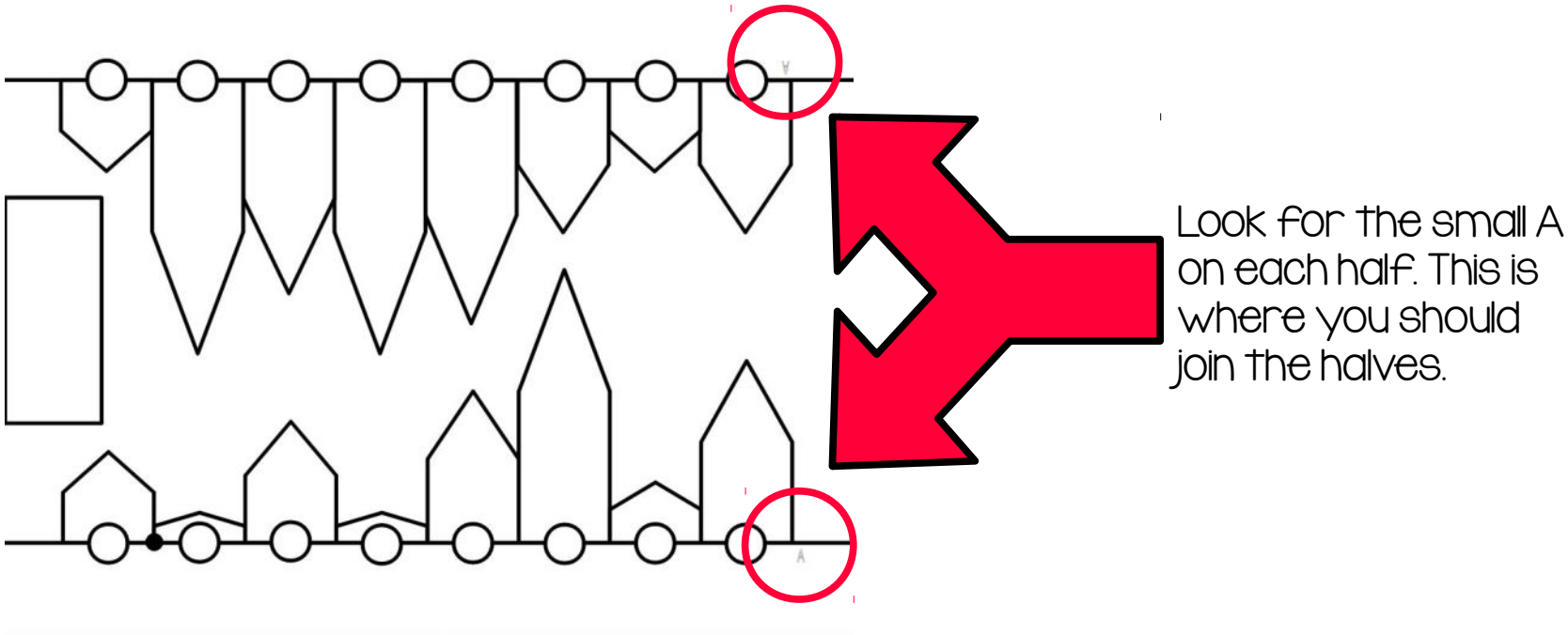
Craftivity Instructions

Required materials:
Card Stock
Stapler and/or Tape
Rubber bands
Scissors

Optional materials:
Metric rulers (if doing the measuring activity)
Stickers (gold and silver stars work well)
Glue on or self-adhesive embellishments such as pompoms, plastic gems, etc.

First, choose your template. There are **5 options** to choose from, depending on your students' cutting and measuring abilities. The crowns can be decorated before cutting out or after (unless you are using 3D embellishments such as pompoms). The template should be cut out, eliminating the crosshatched areas.

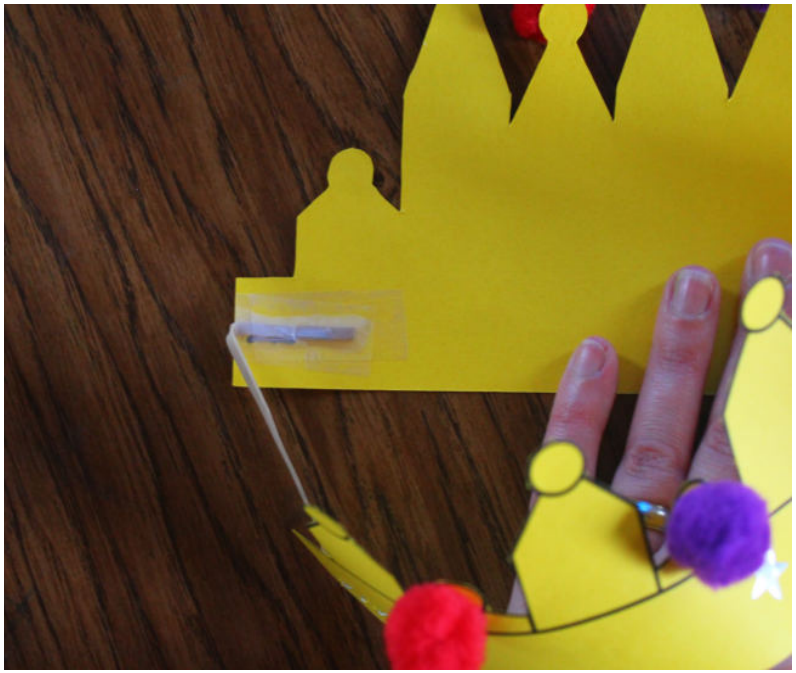
You will need to join the two halves of the crown together. Tape on the front and the back is sufficient to hold the crown together, but you can also glue or staple it.

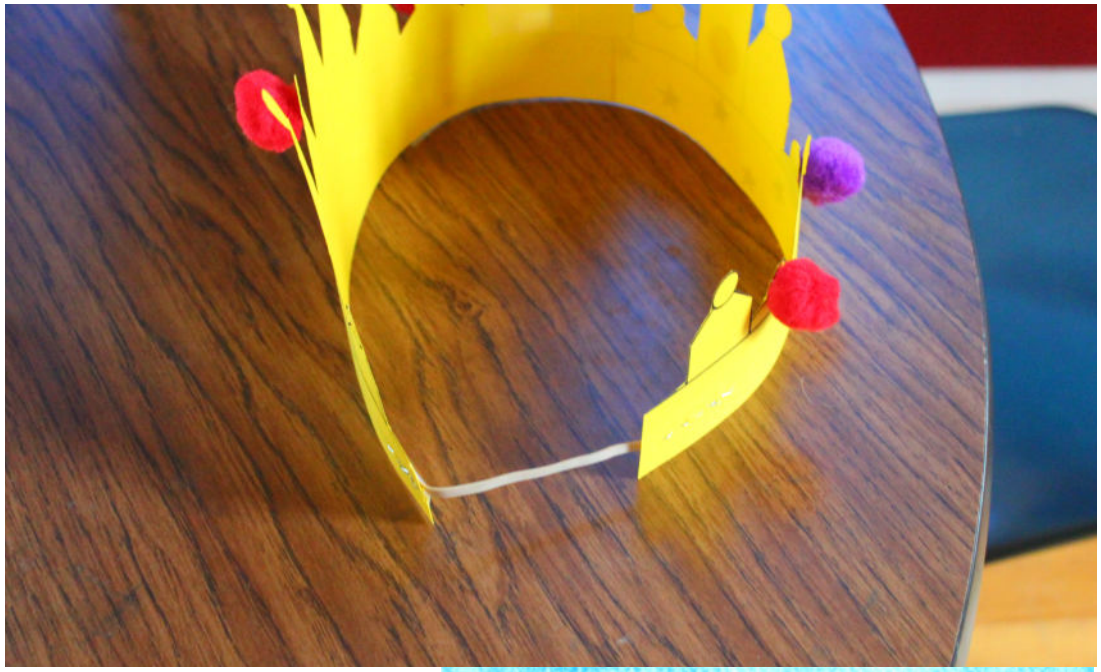


Look for the small A on each half. This is where you should join the halves.

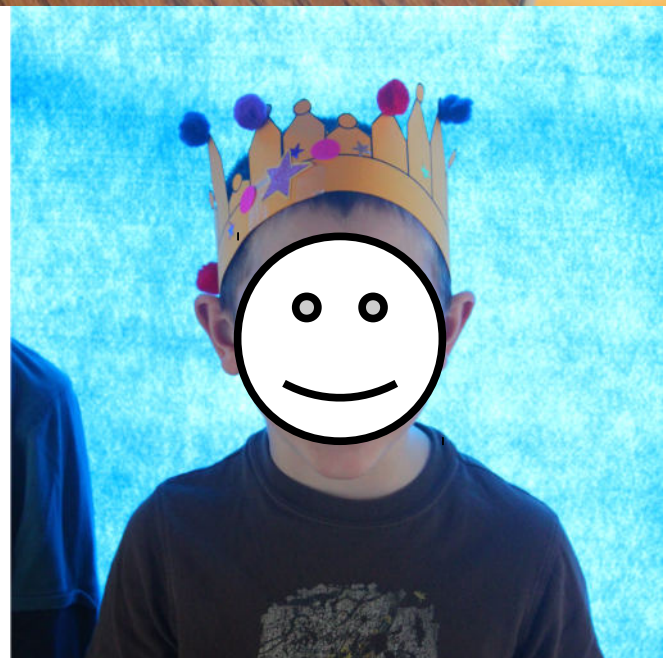
Craftivity Instructions, continued

To fit the crown, use either the extender piece (will fit most lower elementary heads if you are doing an exact fit). Otherwise, you can attach a piece of rubber band as shown:





Make sure any staples used either have the sharp end on the outside of the crown, or are covered over with tape!



Template B shown

Template A

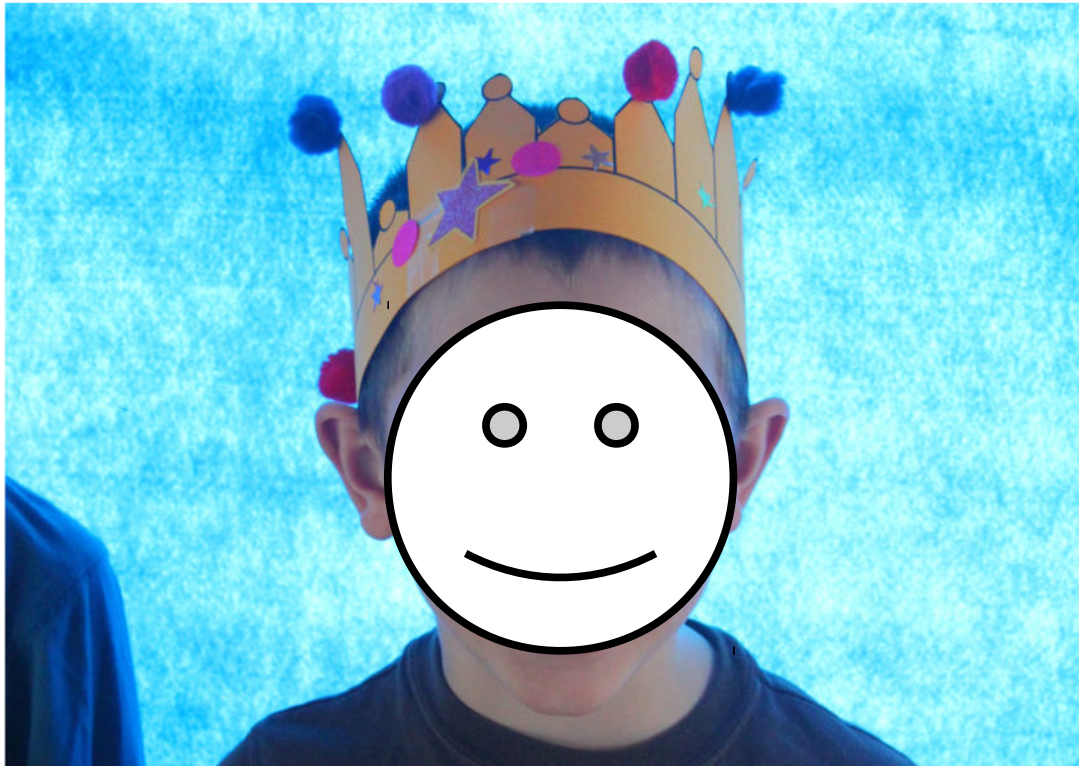
Digits are provided

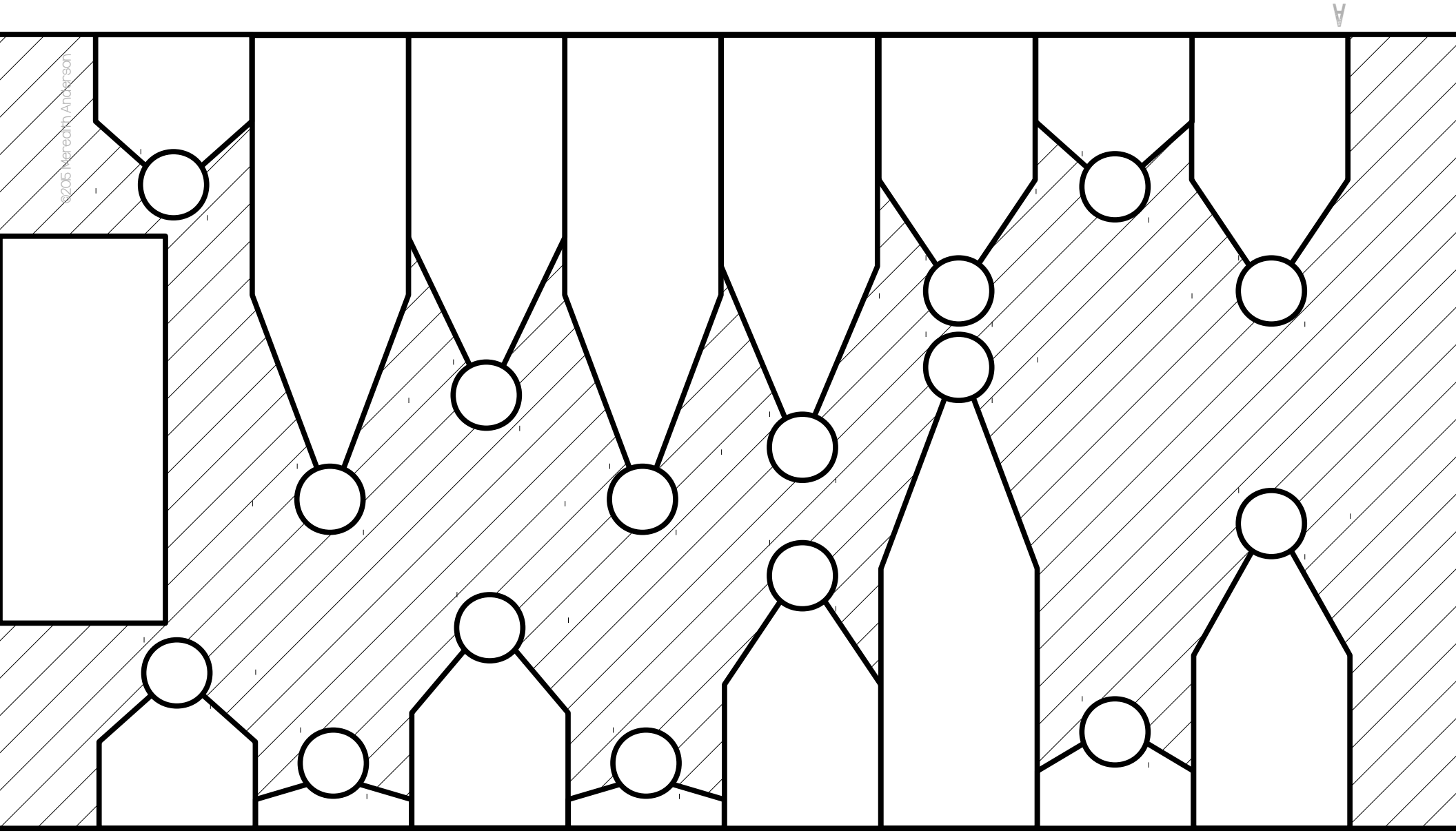
Choose crosshatched version (remove all crosshatched areas) or plain white background (ink saver)

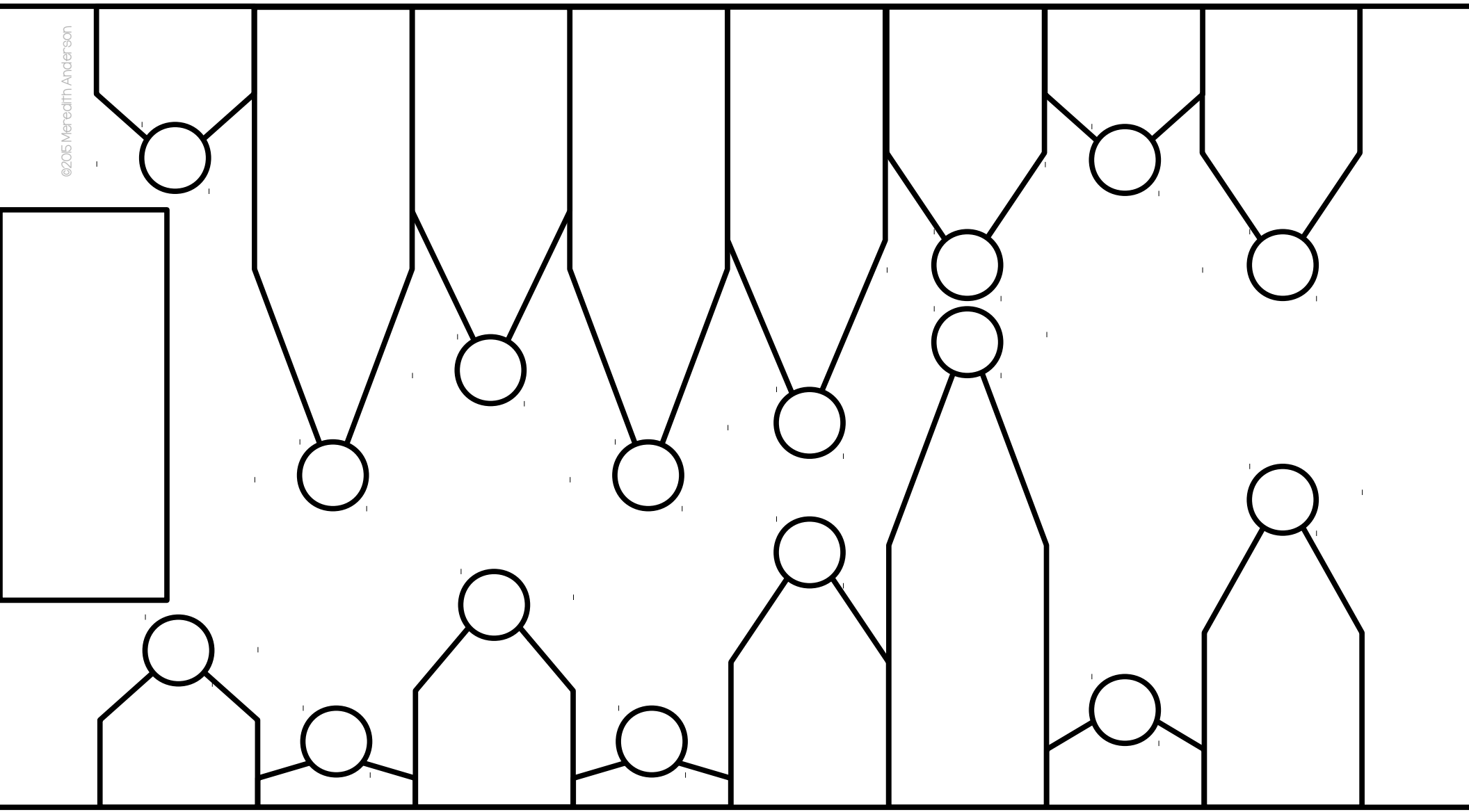
A
©2015 Meredith Anderson
3
9
7
9
8
5
3
5
6
5
4
3
1
1
2
9
A

Template B

Digits are NOT provided, but can be measured in centimeters from the base of the "spike" to where the tip would be.
Choose crosshatched version (remove all crosshatched areas) or plain white background (ink saver)







Template C (Easy)

Digits are provided.
Easier to cut out (no circles at the top).
Choose crosshatched version (remove all crosshatched areas) or plain white background (ink saver).

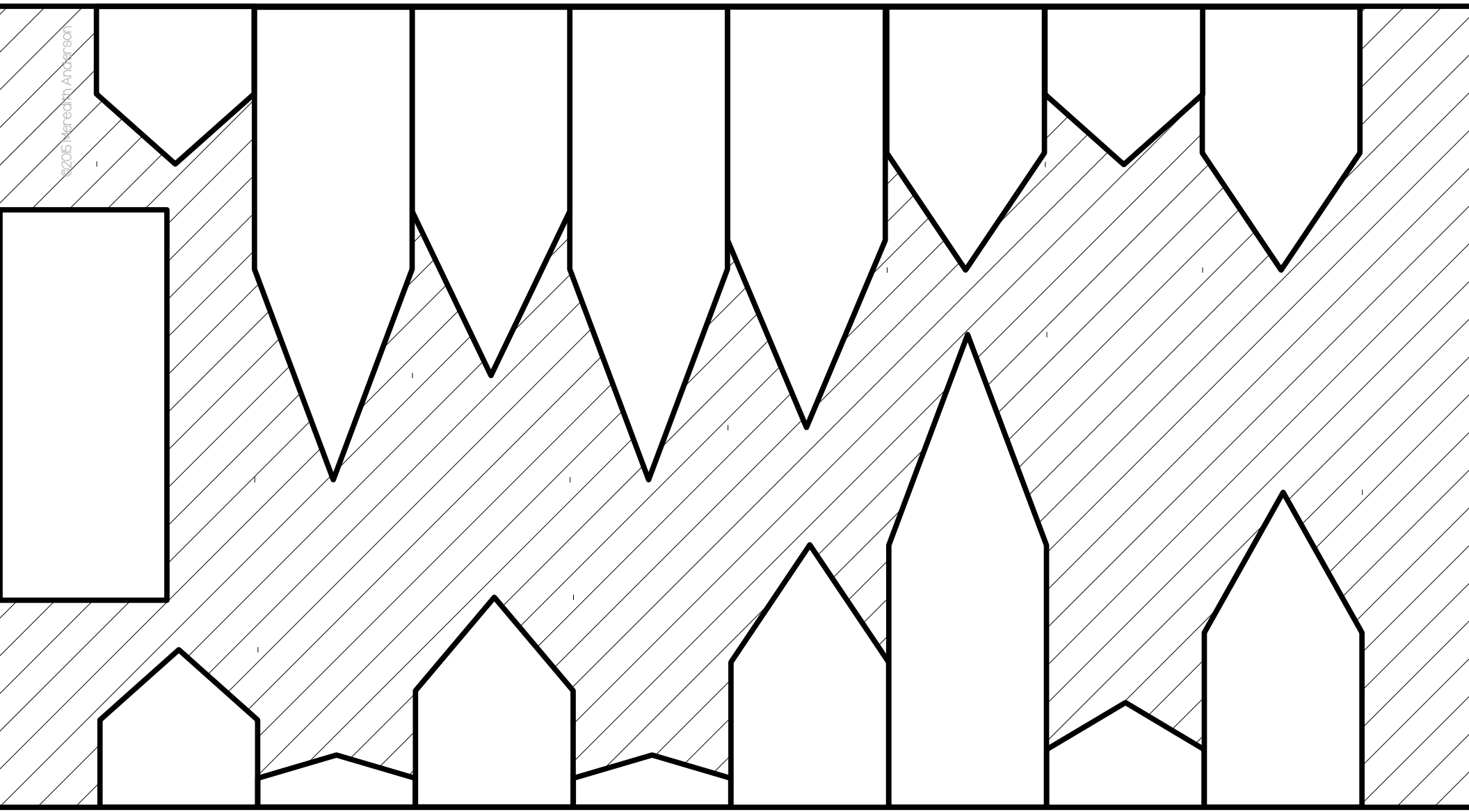
3
9
7
9
8
5
3
5
A
©2015 Meredith Anderson
3
1
4
1
5
9
2
9
A

Template D (Easy)

Digits are NOT provided, but can be measured in centimeters from the base of the "spike" to where the tip would be. Students can either write the digit on the spike, or place that number of designs in the given area (such as 3 stars on the first digit of Pi, 1 smiley face on the second digit).

Easier to cut out (no circles at the top).

Choose crosshatched version (remove all crosshatched areas) or plain white background (ink saver).

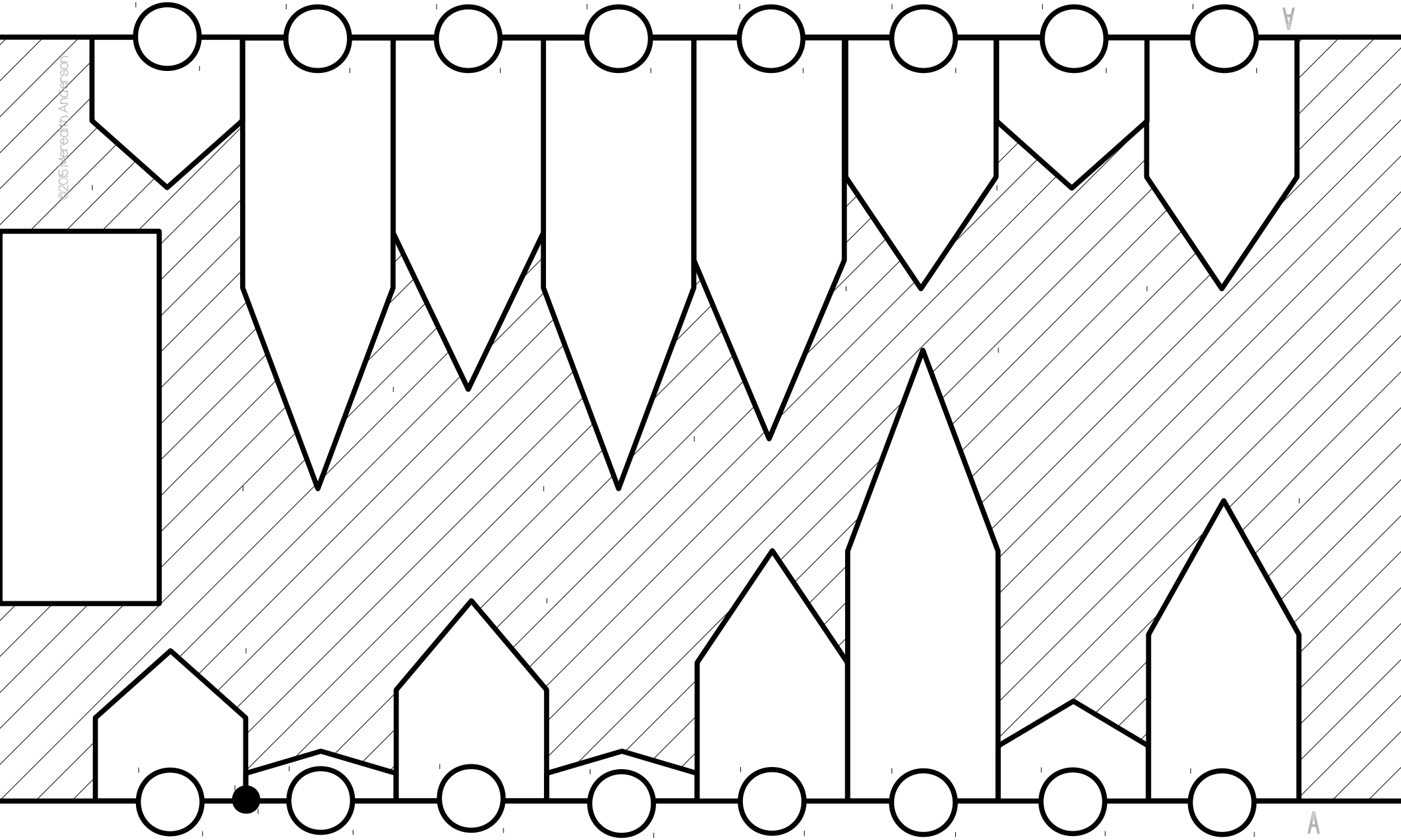


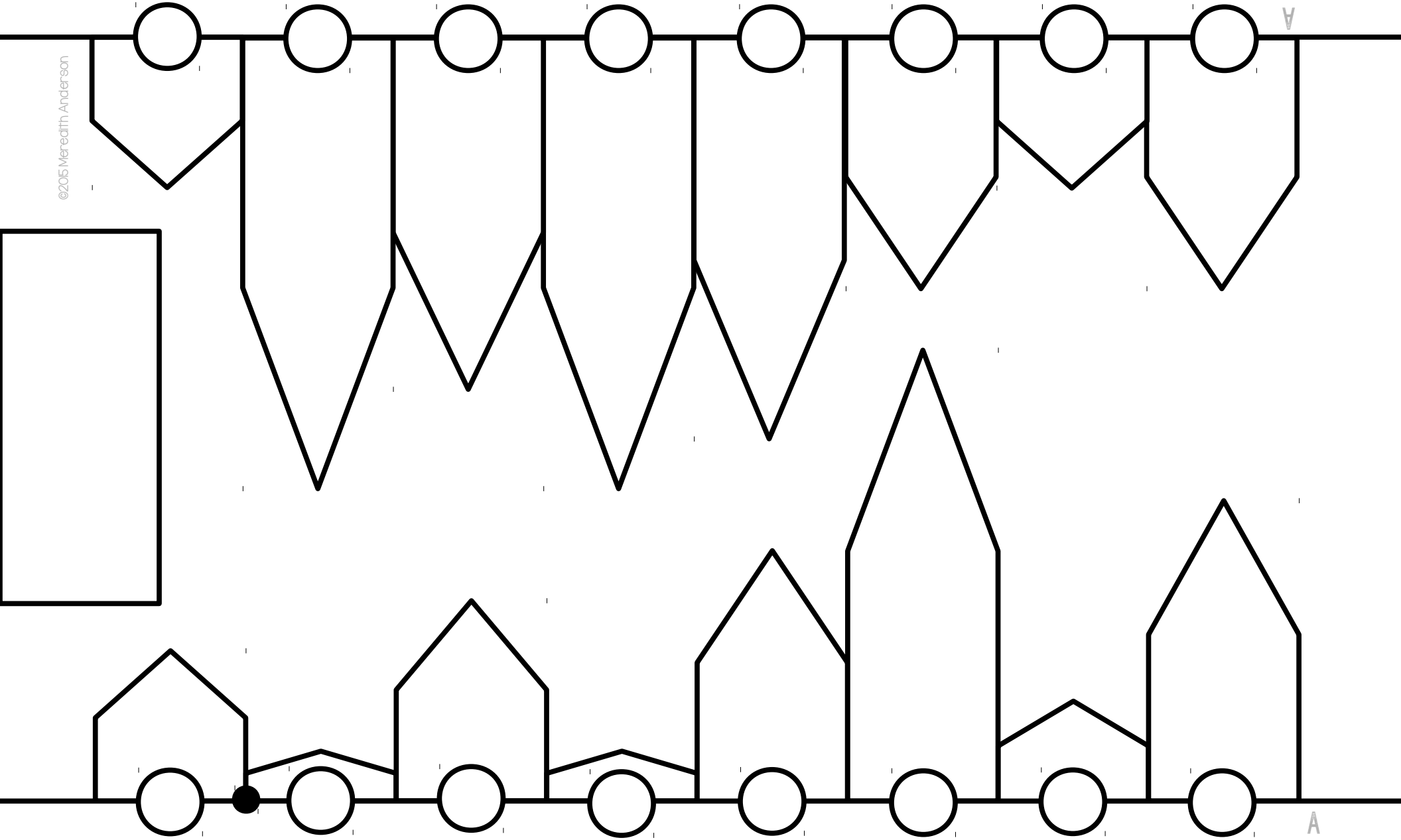
Template E (Easy)

Digits are NOT provided, but can be measured in centimeters from the base of the "spike" to where the tip would be. Students can either write the digit in the circle, or place that number of designs in the given area (such as 3 stars on the first digit of Pi, 1 smiley face on the second digit).

Easier to cut out (no circles at the top).

Choose crosshatched version (remove all crosshatched areas) or plain white background (ink saver).



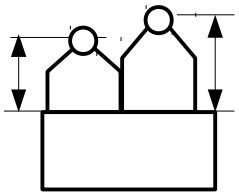


Recording Sheets

Options for both styles of crowns, for use on spike areas (where space allows) or on the band.

Pi Day Crown Recording Sheet

Name: _____



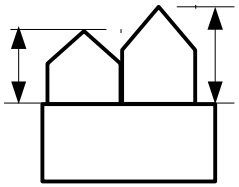
Directions: Using a metric ruler, measure from the top of the band to where the tip of the crown would be (in cm). Record your results below.

1	
2	
3	
4	
5	
6	
7	
8	

9	
10	
11	
12	
13	
14	
15	
16	

Pi Day Crown Recording Sheet

Name: _____



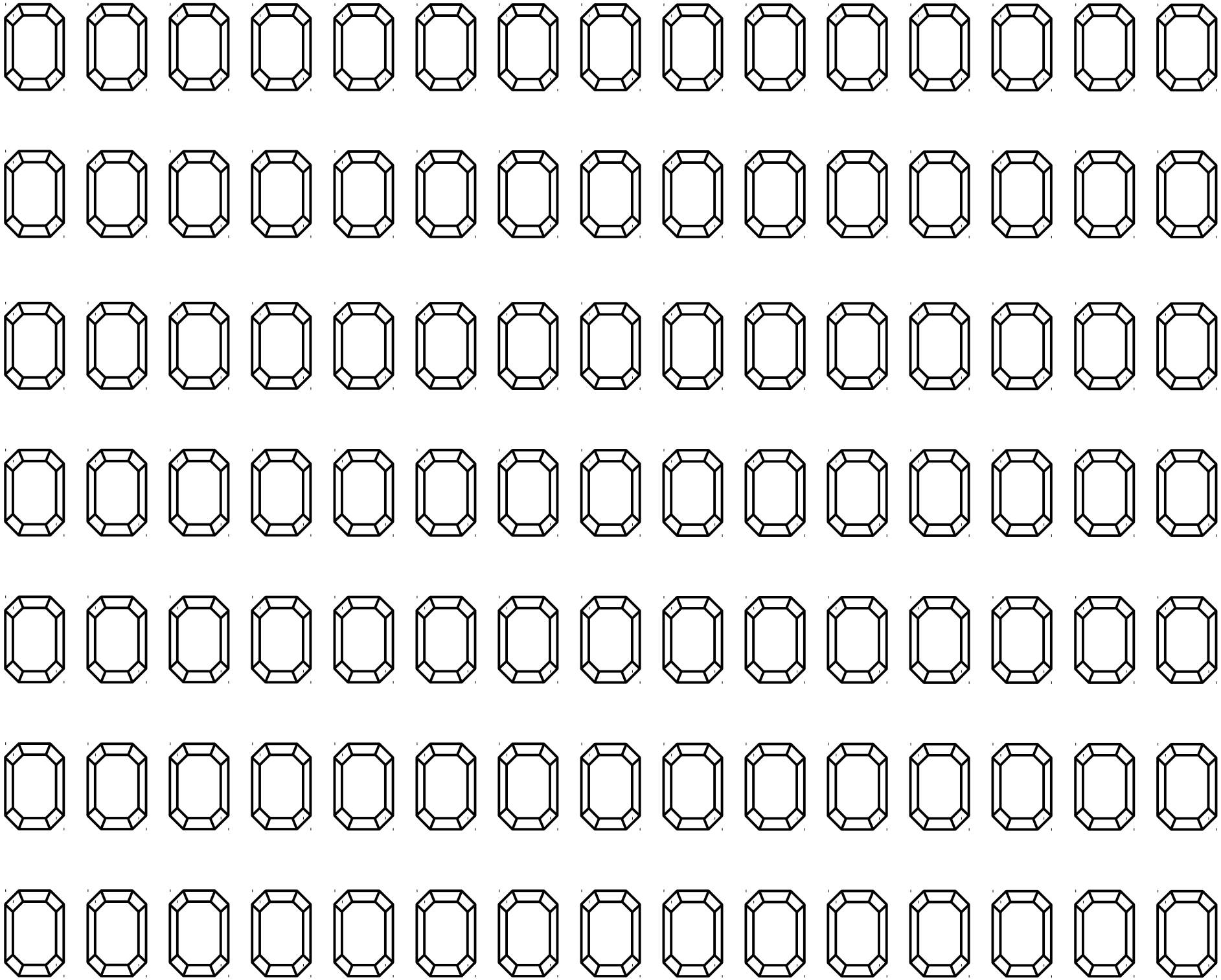
Directions: Using a metric ruler, measure from the top of the band to the tip of the crown (in cm). Record your results below.

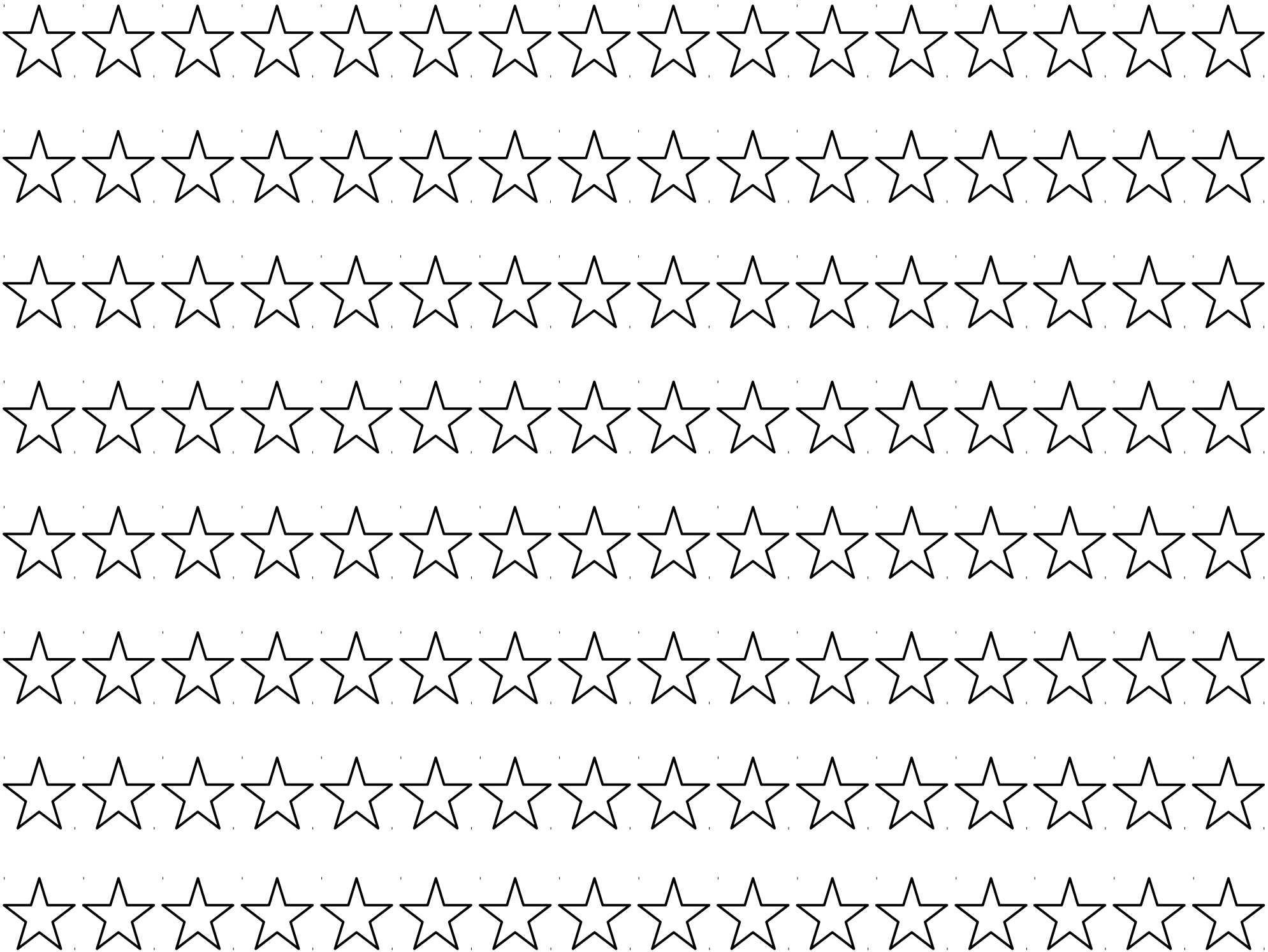
1	
2	
3	
4	
5	
6	
7	
8	

9	
10	
11	
12	
13	
14	
15	
16	

Embellishments (optional)

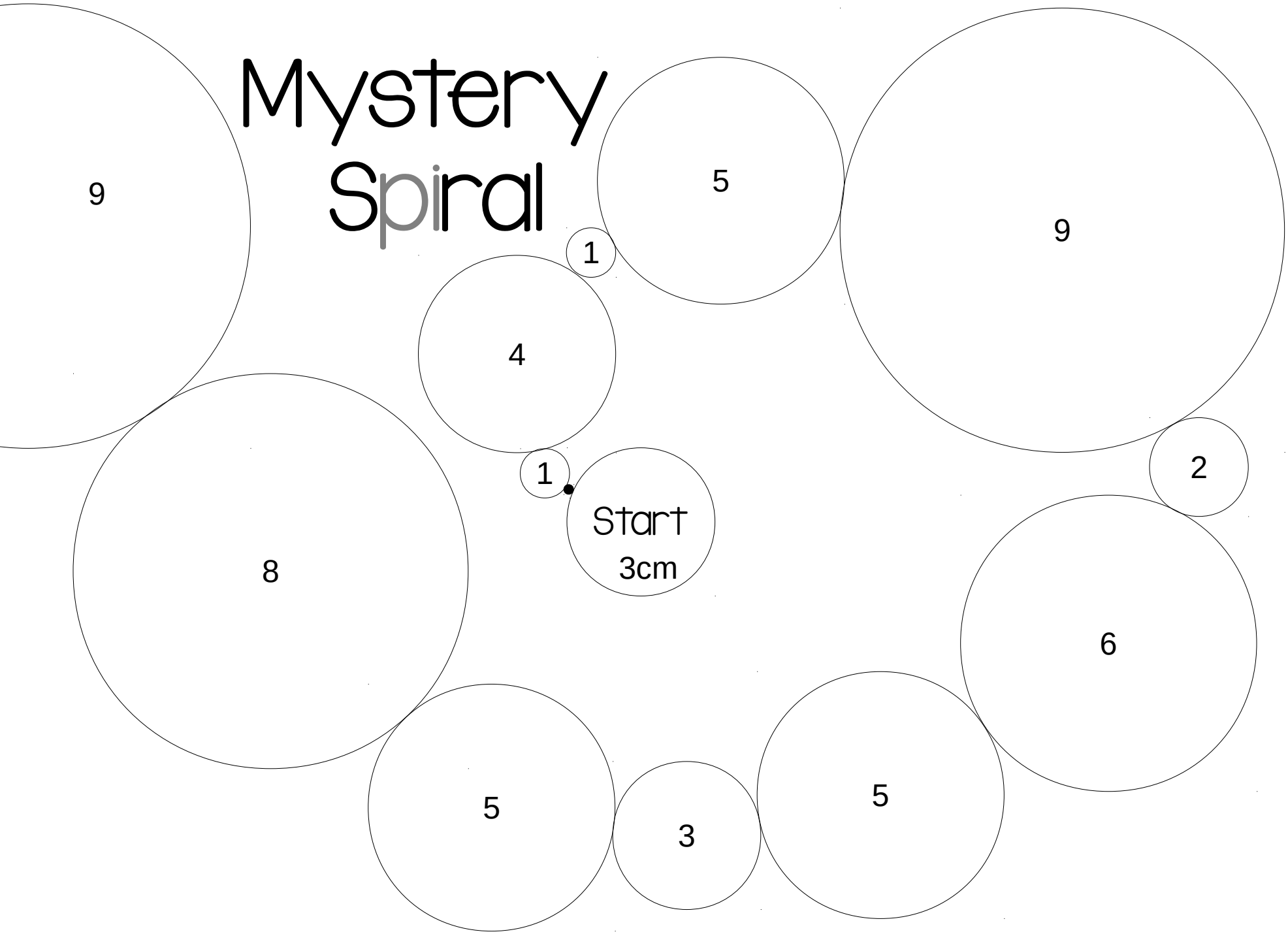
Choose gems, stars, or both.





Answer Keys

Mystery Spiral



Digits of Pi

Name: _____

3.14159265358979323846264338327950288419716939937510582
09749445923078164062862089986280348253421170679821 48
08651328230664709384460955058223172535940812848111 7450
28410270193852110555964462294895493038196442881097566 5
93344612847564823378678316527120190914564856692346034 8
61045432664821339360726024914127372458700660631558817 4
88152092096282925409171536436789259036001133053054882
04665213841469519415116094330572703657595919530921861 1738
19326117931051185480744623799627495673518857527248912279 38
18301194912983367336244065664308602139494639522473719
07021798609437027705392171762931767523846748184676694
05132000568127145263560827785771342757789609173637178 72
14684409012249534301465495853710507922796892589235420
19956112129021960864034418159813629774771309960518707211 3
4999999837297804995105973173281609631859502445945534 6
90830264252230825334468503526193118817101000313783 8

Digits of Pi

Name: _____

3.14159265358979323846264338327950288419716939937510
58209749445923078164062862089986280348253421170679
82148086513282306647093844609550582231725359408128
48111745028410270193852110555964462294895493038196 44
28810975665933446128475648233786783165271201909145 6
48566923460348610454326648213393607260249141273724
58700660631558817488152092096282925409171536436789 2
59036001133053054882046652138414695194151160943305 72
70365759591953092186117381932611793105118548074462 3799
62749567351885752724891227938183011949129833673362 44
06566430860213949463952247371907021798609437027705 3
92171762931767523846748184676694051320005681271452 63
56082778577134275778960917363717872146844090122495 34
30146549585371050792279689258923542019956112129021 96
08640344181598136297747713099605187072113499999983 72
97804995105973173281609631859502445945534690830264 2

Circle Puzzle

Name:_____

Everyone is looking for circular objects in the room. After recording what they find, each person gets to keep one object they spotted. Yasmin spotted the clock face and a dime. Neil spotted the wheel and the clock face. Trong only saw the clock face.

Neil	X		
Yasmin			X
Trong		X	

Which object did each person get to keep?

Neil wheel

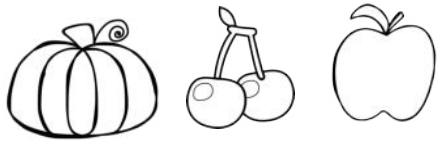
Yasmin dime

Trong clock

Pie Puzzle 1

Name:_____

There are three different kinds of pie at The Pie Platter Bakery. Each person gets a different kind of pie. Charlie only likes cherry pies. Marie will eat any kind of pie except for pumpkin. George likes cherry and pumpkin pie.



George	X		
Charlie		X	
Marie			X

Which type of pie does each person eat?

George pumpkin

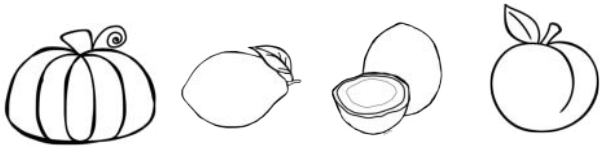
Charlie cherry

Marie apple

Pie Puzzle 2

Name:_____

There are four different kinds of pie at The Big Belly Bakery. Each person gets a different kind of pie. Mark likes all pie except lemon meringue and coconut cream pie. Rashida only likes pumpkin pie. Bella likes peach and lemon meringue pie. Kevin likes coconut cream pie.



Rashida	X			
Mark				X
Bella		X		
Kevin			X	

Which type of pie does each person eat?

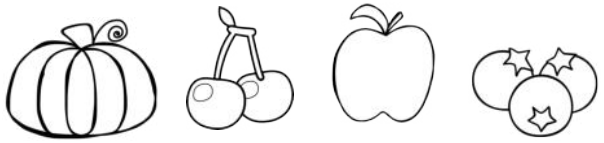
Rashida pumpkin Bella lemon

Mark peach Kevin coconut

Pie Puzzle 3

Name:_____

There are four different kinds of pie at The Pie Platter Bakery. Each person gets a different kind of pie. Charlie only likes blueberry pies. Marie will eat any kind of pie except for pumpkin. George likes cherry and pumpkin pie. Kelsea likes pumpkin and blueberry pie.



George		X		
Charlie				X
Marie			X	
Kelsea	X			

Which type of pie does each person eat?

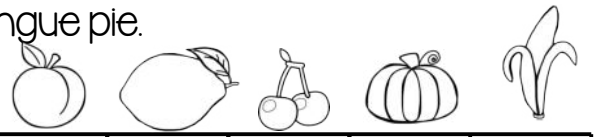
George cherry Marie apple

Charlie blueberry Kelsea pumpkin

Pie Puzzle 4

Name:_____

There are five different kinds of pie at The Big Belly Bakery. Each person gets a different kind of pie. Iggy likes lemon meringue and banana cream pie. Jamie likes cherry and lemon meringue pie. Megan likes pumpkin and banana cream pie. Bryce will only eat pies that Megan doesn't like. Sarah only eats lemon meringue pie.



Jamie			X		
Sarah		X			
Iggy					X
Megan				X	
Bryce	X				

Which type of pie does each person eat?

Jamie cherry Megan pumpkin

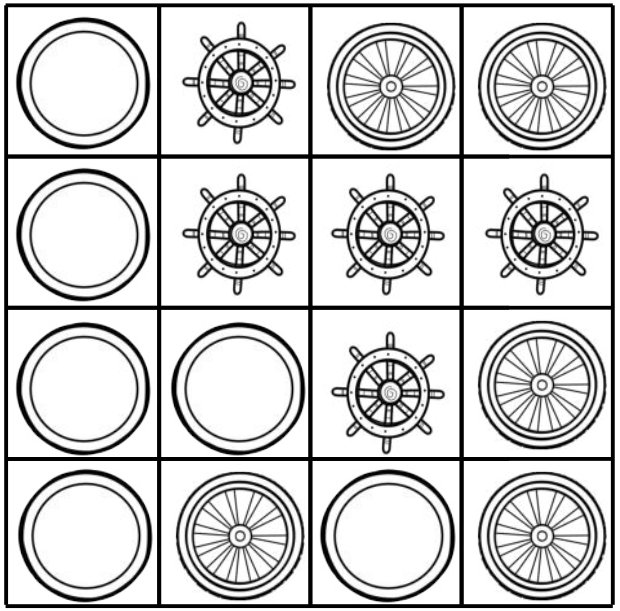
Sarah lemon Bryce peach

Iggy banana

Circular Logic 1

Name:_____

Directions: Find the value of each object.



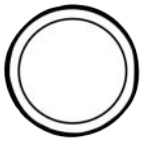
13

17

12

10

8 13 15 14

 = 2

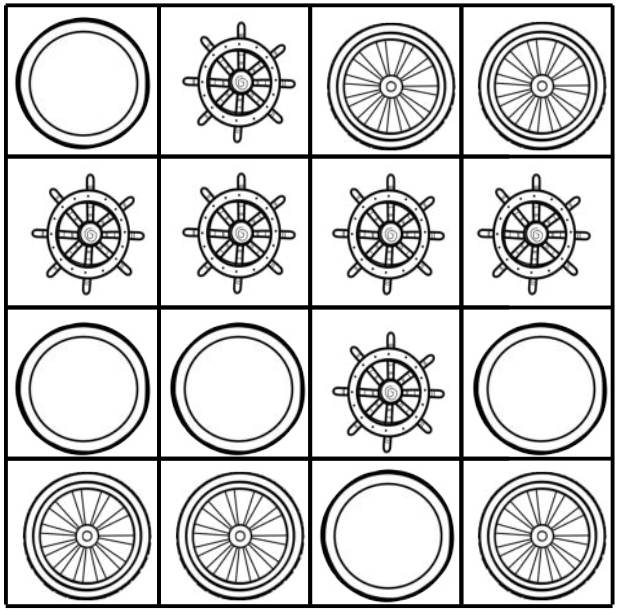
 = 3

 = 5

Circular Logic 2

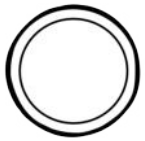
Name:_____

Directions: Find the value of each object.



16
16
34
13

25 19 19 16

 = 10

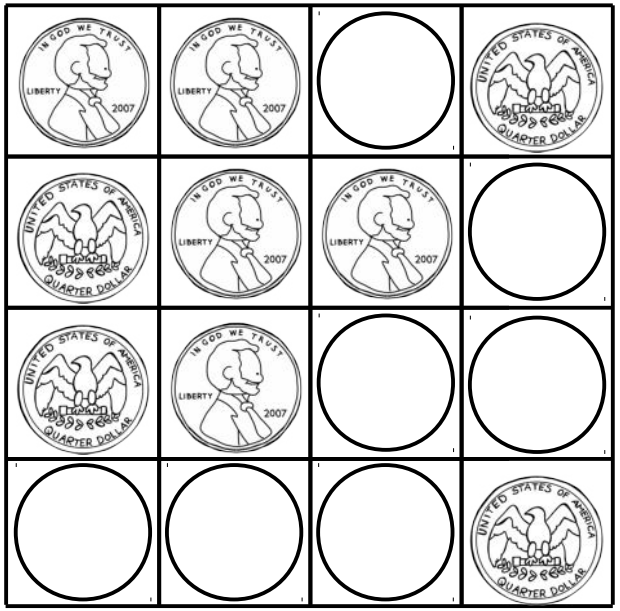
 = 1

 = 4

Circular Logic 3

Name:_____

Directions: Find the value of each object.

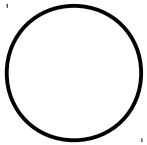


40
40
55
70

45 35 65 60

 = 5

 = 10

 = 20

Credits

Kimberly Geswein Fonts
Creative Clips
EduClips
Jessica Stanford
My Cute Graphics
Kevin and Amanda
Little Red's Schoolhouse
Pink Cat Studio
GistX & Eveleth by Yellow Design Studio