Section 1 of 9	
Geo-shape Visualization User Study	
Form description	

The Research - Purpose of Study

Project title: Geo-shape Visualization User Study

Purpose of the Study: We invite you to participate in our research study that aims to understand how we visualize shapes in general by comparing areas, lengths, and perimeters.

Procedures

You will solve questions about squares vs circles and provide feedback.

You are eligible if:

- You have not participated in this study before.
- You are located in the U.S.
- You are at least 18 years old.
- You are using a laptop/desktop computer, or mobile device.
- You do not have color blindness or color vision deficiency.
- You are comfortable with reading/interpreting maps and size of shapes.

How long will the study take?

We expect this study to take around 5-10 minutes.

What are your benefits?

This research is not designed to benefit you personally.

We hope that, in the future, other people might benefit from this study through improved information visualization design.

What are your risks?

There are no known risks associated with participating in this research project.

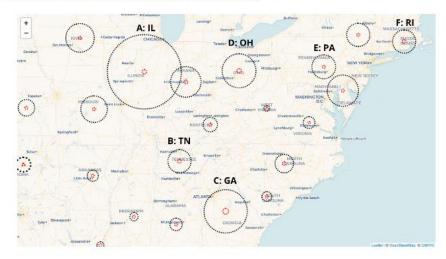
We discuss confidentiality of your participation below.

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. If you withdraw prior to completing the study, you will not receive compensation.

Selecting "Yes" will indicate that you agree to participate and that
- You have read this consent form,
 You are eligible to participate in this study, You have had an opportunity to ask questions about your participation, and
- You voluntarily consent to participate.
Do war word to a self-death 0.*
Do you want to participate? *
○ Yes
○ No
After section 1 Continue to next section ▼
Section 2 of 9
Section 2 of 9
Worker ID ×
Description (optional)
Provide your worker ID *
Floride your worker ib
Short answer text
After section 2 Continue to next section ▼
Section 3 of 9
Diameter and Side Length Tasks
Using only the visual information on the maps, please estimate (by eye) the relative sizes of the black dotted shapes . Note: the values are arbitrary, so no outside information will be useful.
anapes. Mote, the values are abuttary, so no outside information will be useful.
Definitions:
Diameter of Circle - a straight line that runs from one side of the circle to the other, passing through the center
(basically the maximum width of the circle)
Side Length of Square - one side of the square

1. Ohio (D: OH) has a black dotted circle with a diameter of 100. *

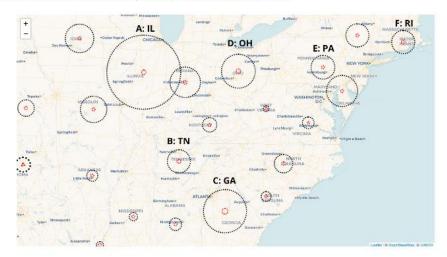
What is the diameter of Illinois (A: IL)'s black dotted circle?



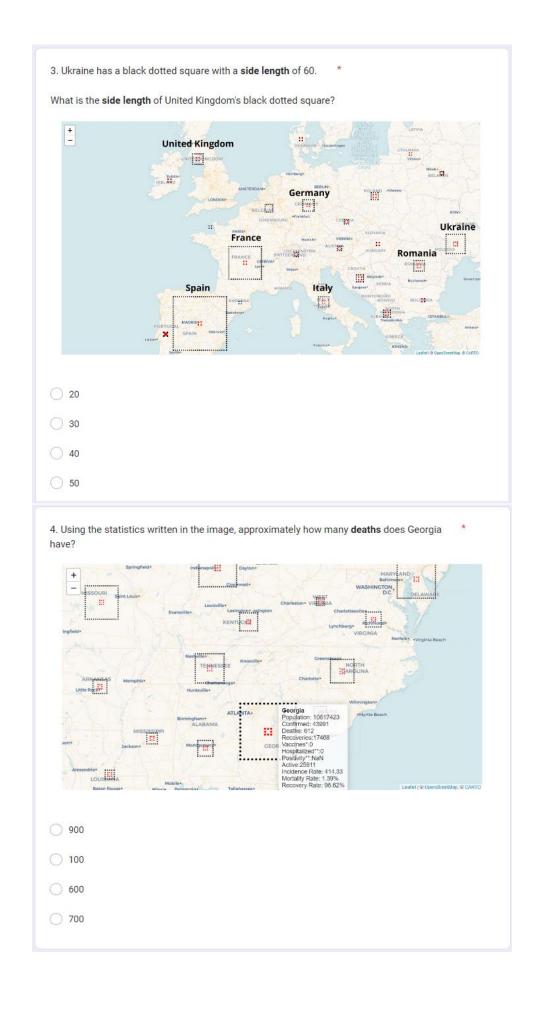
- O 200
- 210
- 220
- 230

2. Tennessee (B: TN) has a black dotted circle with a diameter of 70. *

What is the diameter of Pennsylvania (E: PA)'s black dotted circle?

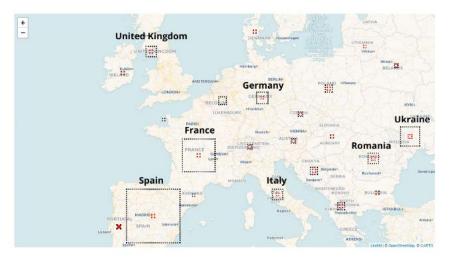


- O 60
- O 70
- 08
- 90



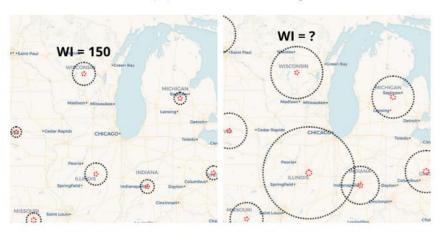
5. France has a black dotted square with a side length of 100. *

What is the side length of Spain's black dotted square?



6. Wisconsin (WI) has a black dotted circle with a **diameter** of 150 (as seen on the left image).

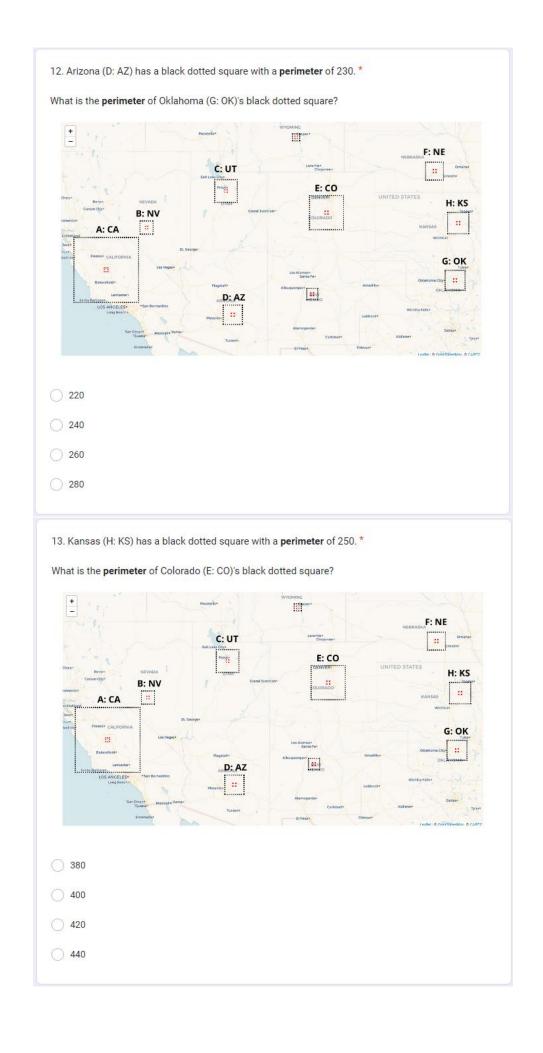
What is the diameter of Wisconsin (WI)'s black dotted circle on the right?

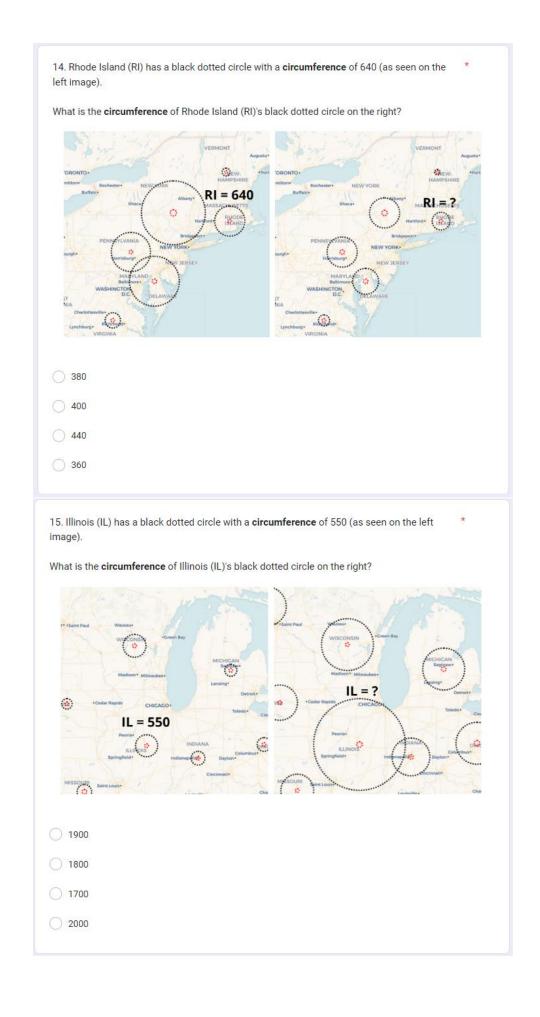


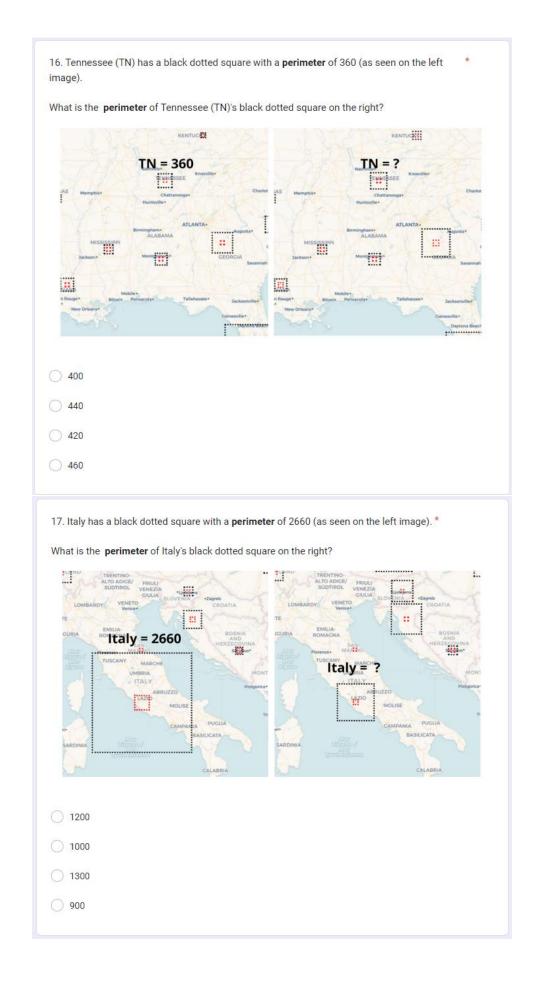
7. New York (NY) has a black dotted circle with a diameter of 430 (as seen on the left image). What is the diameter of New York (NY)'s black dotted circle on the right? NY = 430NY = ? 0 180 200 160 220 8. Texas (TX) has a black dotted square with a side length of 620 (as seen on the left image). What is the side length of Texas (TX)'s black dotted square on the right? aye TX = 620TX = ?13 330 350 0 400 370

9. Serbia has a black dotted square with a side length of 120 (as seen on the left image). * What is the side length of Serbia's black dotted square on the right? AHUA * Serbia = ? == :: Serbia = 120 83 :: Shi dan **400** 360 380 **420** Section 4 of 9 Circumference and Perimeter Tasks : Using only the visual information on the maps, please estimate (by eye) the relative sizes of the black dotted shapes. Note: the values are arbitrary, so no outside information will be useful. Definitions: Circumference of a Circle - the linear distance around the circle (in other words, if a circle is opened to form a straight line, then the length of that line will be the circle's circumference) Perimeter of a Square - the sum of all 4 side lengths

10. Tunisia has a black dotted circle with a circumference of 140.* What is the circumference of Pakistan's black dotted circle? **United Kingdom** * KINGDON Austria Spain (PA) Iran Syria Tunisia Pakistan HEAM 160 170 180 190 11. Iran has a black dotted circle with a circumference of 630.* What is the circumference of Austria's black dotted circle? **United Kingdom** KINGDON Austria Spain that Syria Iran (A) Tunisia Pakistan 200 180 0 160 140







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Area Tasks

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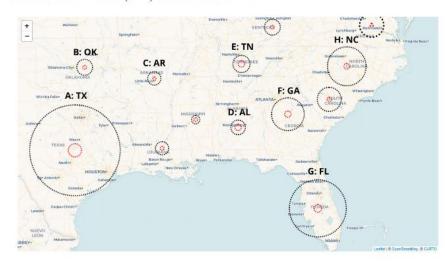
Using only the visual information on the maps, please estimate (by eye) the relative sizes of the **black dotted shapes**. Note: the values are arbitrary, so no outside information will be useful.

Definition:

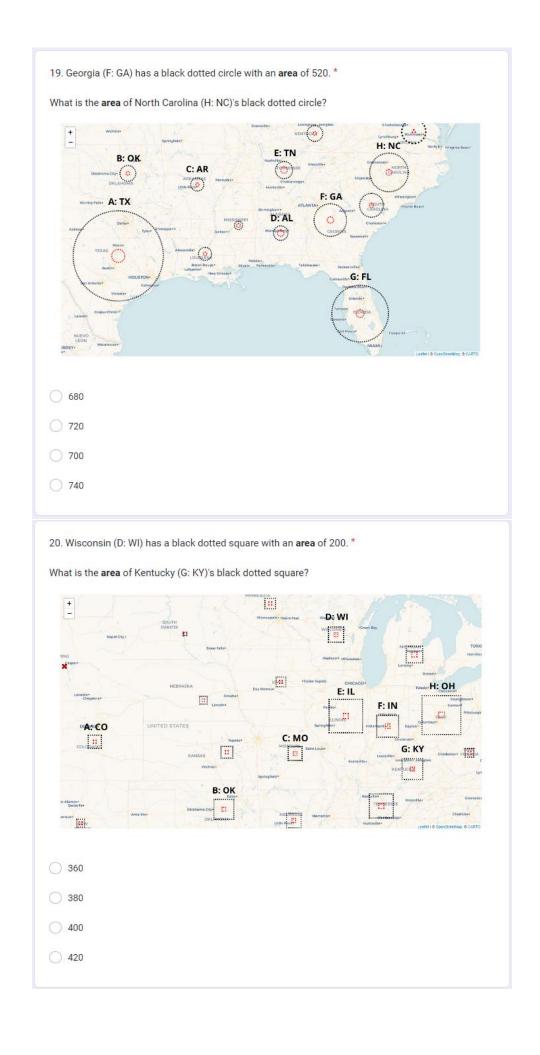
Area of a shape - the internal region bounded by the shape (in other words, the surface that would be covered if the object were shaded in)

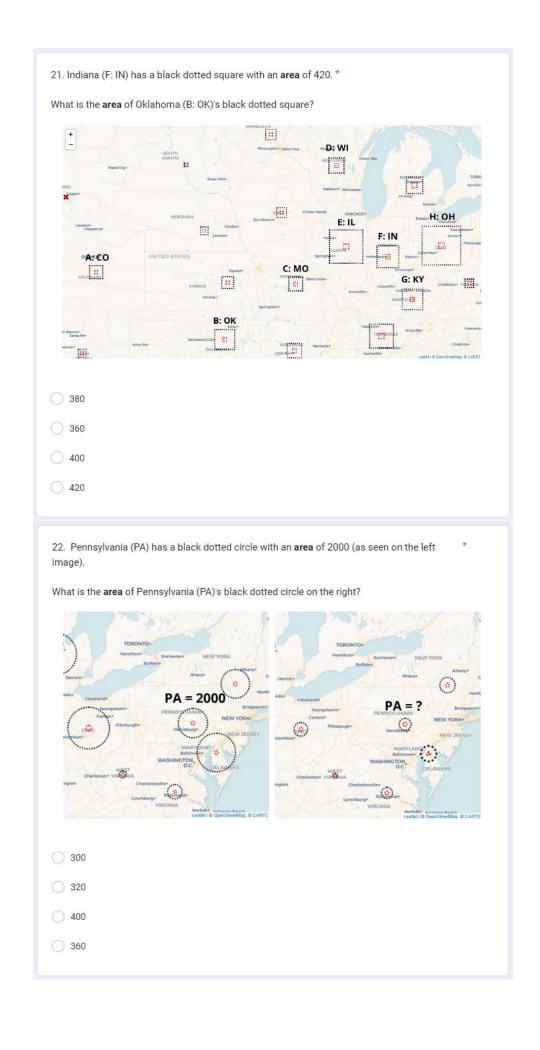
18. Texas (A: TX) has a black dotted circle with an area of 3800. *

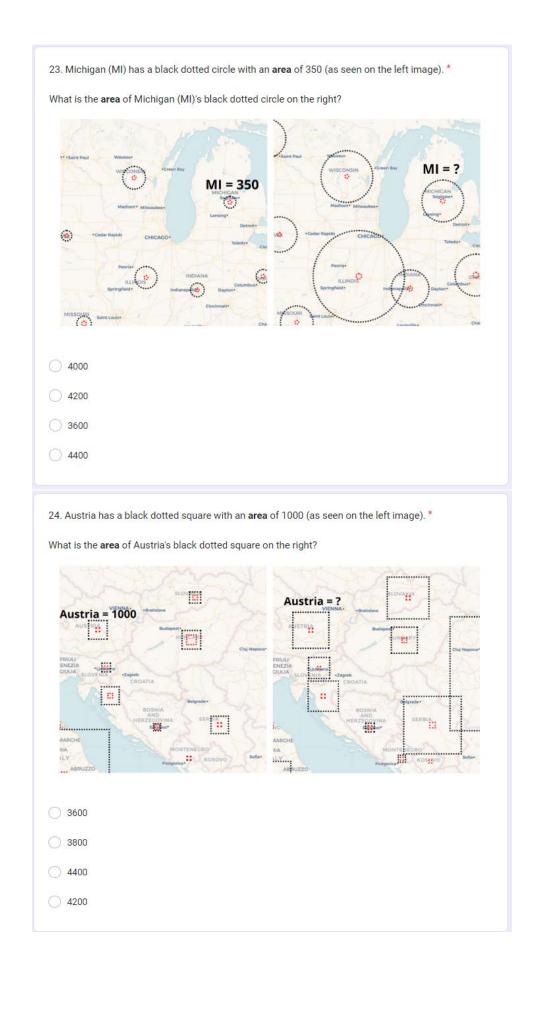
What is the area of Florida (G: FL)'s black dotted circle?



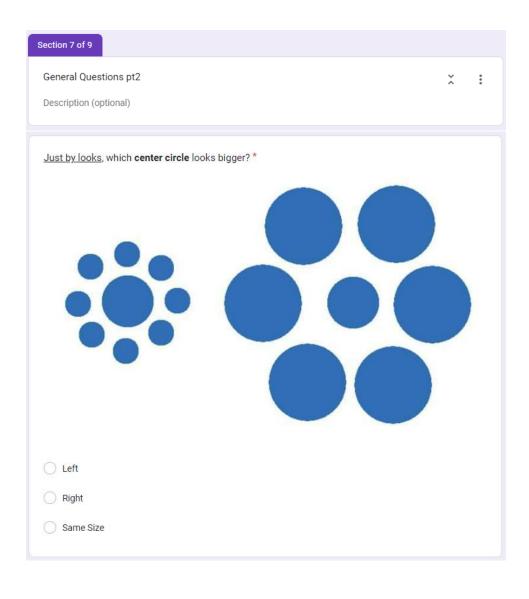
- 1700
- 1300
- 1500
- 1900

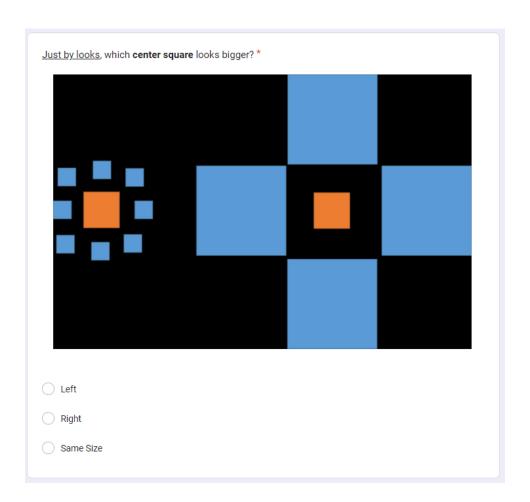






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Nobele - Blook Persacolar New Orleans*	Tallahasses* Jacksonvilles Celmsvilles* Dayrons 8	n Rouge * Biloxi * New Orleans *	Responses Tallahassee	Gainesville*
1400				
1200				
1000				
800				
ection 6 of 9				
General Questions pt1				×
Description (optional)				
Across all the tasks, for	which shape did you fin	d it easiest to estima	ate the relative siz	e? *
Across all the tasks, for	which shape did you fin	d it easiest to estima	ate the relative siz	e?*
	which shape did you fin	d it easiest to estima	ate the relative siz	e? *
Circles	which shape did you fin	d it easiest to estima	ate the relative siz	e?*
Circles Squares Same difficulty	which shape did you find			
Circles Squares Same difficulty Across all the tasks, for	which measurement did			
Circles Squares Same difficulty Across all the tasks, for size?	which measurement did			





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Demographics	×	:
Description (optional)		
What is your age range? *		
O 18-20		
O 21-30		
O 31-40		
<u> </u>		
<u> </u>		
O 61+		
Prefer not to answer		
What is your gender? *		
○ Male		
○ Female		
Prefer not to answer		

What is the highest degree or level of school you have completed or are currently enrolle	ed in?*	
Cless than High School		
High School or Equivalent		
Associate degree		
Bachelors degree		
Masters or Professional		
Terminal degree (PhD/MD/JD)		
Prefer not to answer		
Additional Comments		
Long answer text		
After section 8 Continue to next section		
Section 9 of 9		
Thank you! Please see the completion code below	*	:
COMPL3T3DCORONAV!Z		