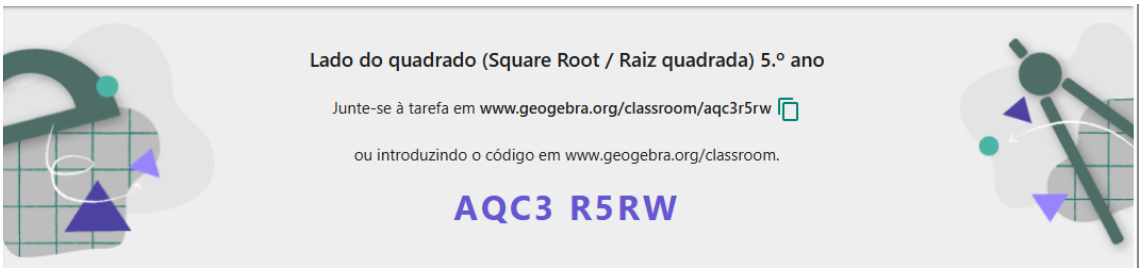
Side of a square and GeoGebra

(Square root and GeoGebra)

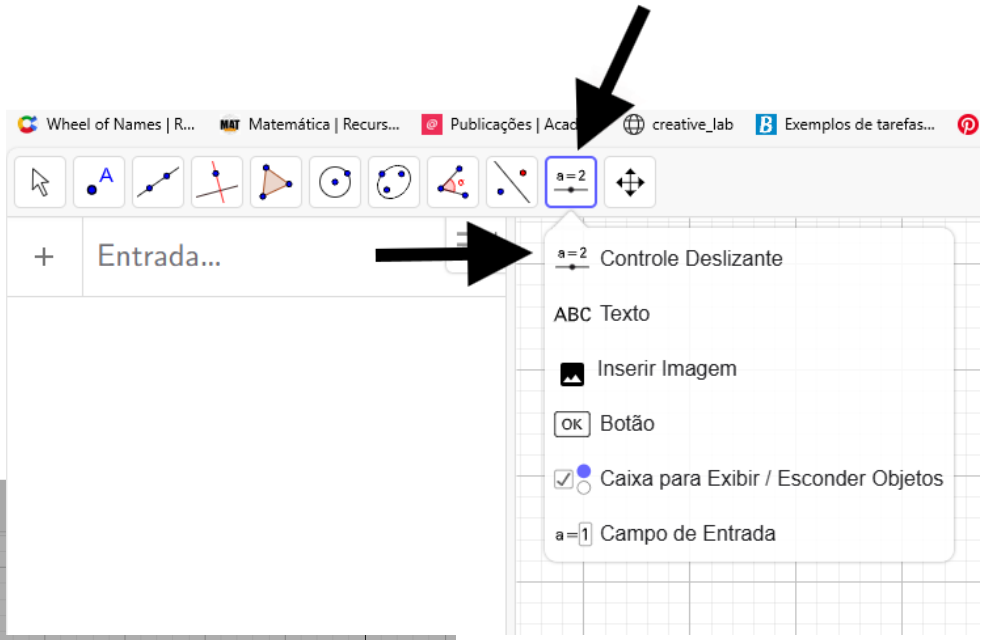
Step 1: Create the link to assign to the task

https://www.geogebra.org/classroom/aqc3r5rw

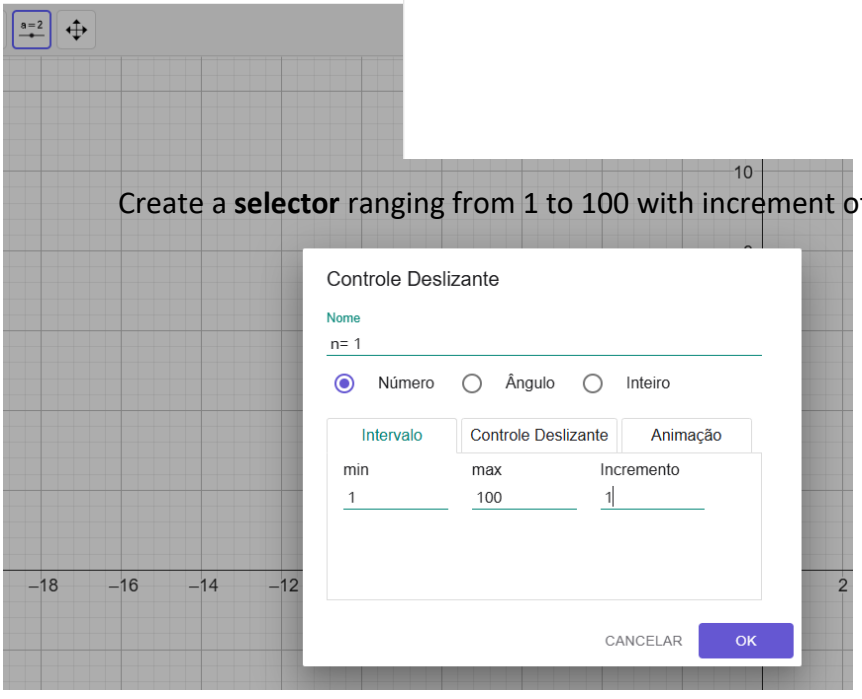


Step 2: Create a Slider Selector

Let's add a **slider** to allow the user to choose a number (corresponding to the area of the Square) and view the measurement of the side of the square (square root of the area).



Create a **selector** ranging from 1 to 100 with increment of 1

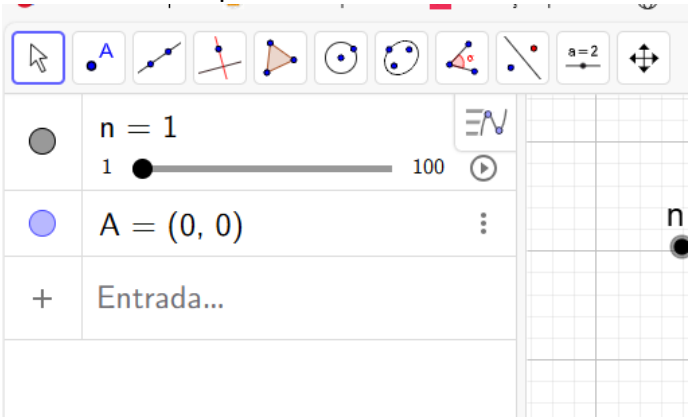


Step 3: Create a Square with Area n

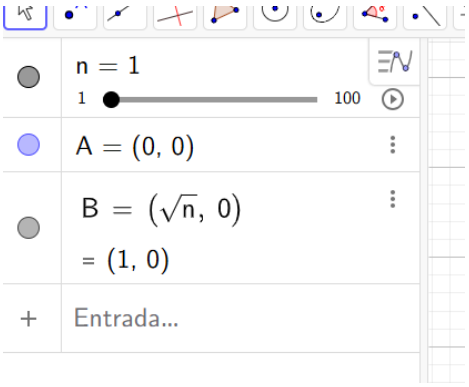
Since we want to visualize **perfect squares** , we draw a square whose area is ***n (n*** represents any value). To do this, follow these steps:

1. Define a fixed point by writing in the input field:

Create a second point based on



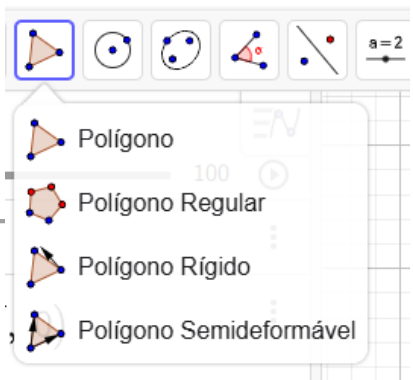
2. Define a second point B:



3. Construct the other vertices of the square, placing in the input field:

$C = (\sqrt{n}, \sqrt{n})$
$D = (0, \sqrt{n})$

4. Form the square by connecting points A, B, C and D:

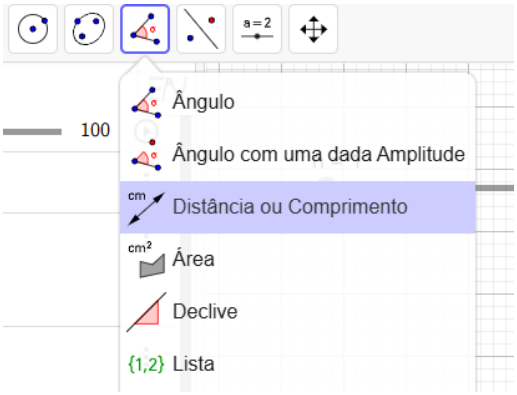


Step 4: Identify the side measurement and the area

We want to show the measurement of the side of the constructed square (dynamically display the square root of the chosen number) and the measurement of the area of the square.

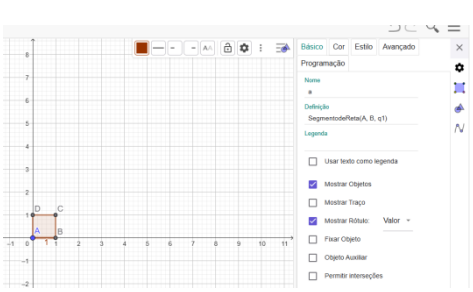
1. **Side length**

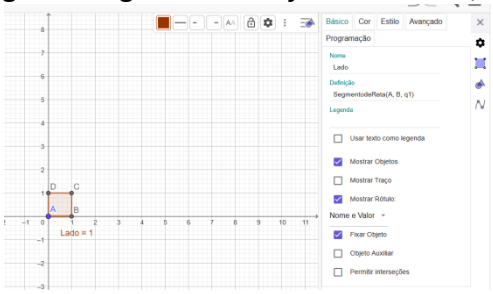
- *Distance or Length* tool as shown in the image



- Then select the segment AB. Next to the segment, the value equal to the measurement of the side of the square will appear;

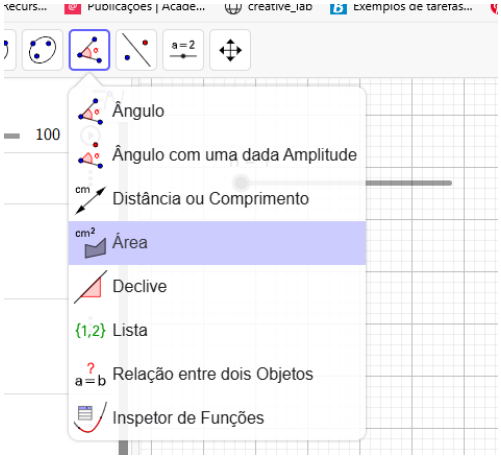
- Reselect the side [AB], *Settings* and change the segment *name from a* to *Side;*





2. **Value of the area of the square:**

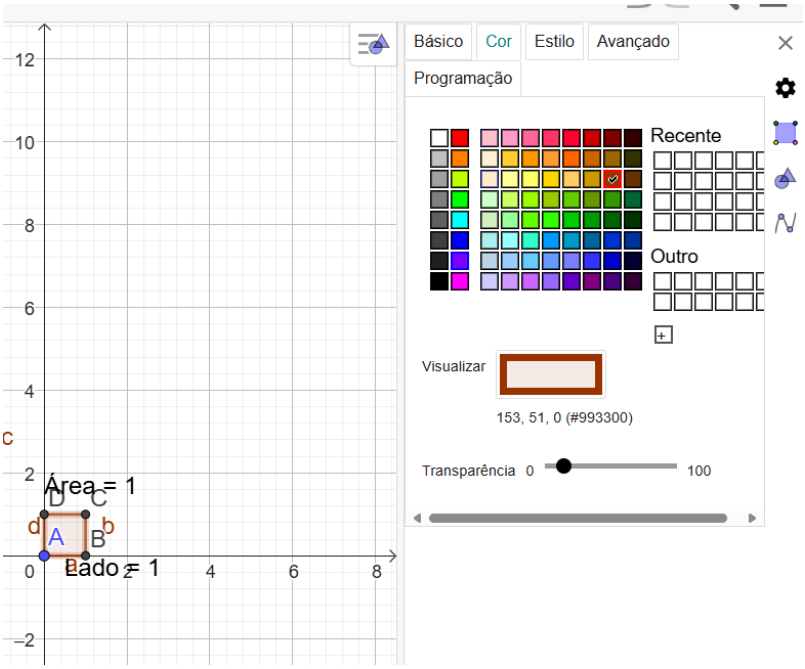
- **Choose the area tool as shown in the image**



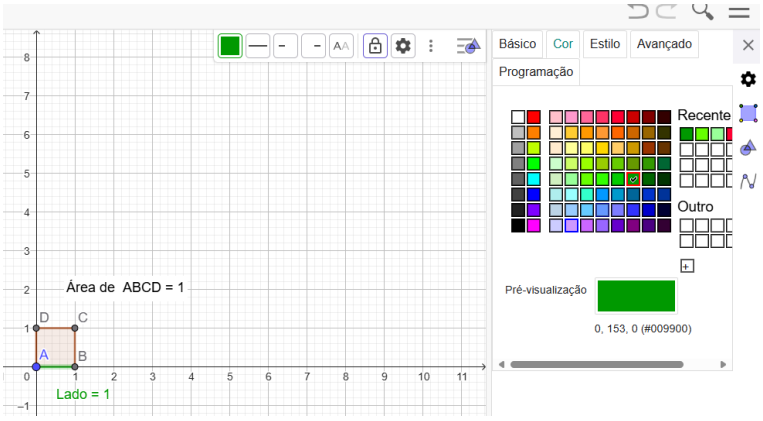
- **Then select the square and you will get the area value of the square.**

Step 5: Improve Visualization

1. **Fill and Colors:** Click on the square and go to "settings" → "Color" → “Opacity”. Choose a soft color.

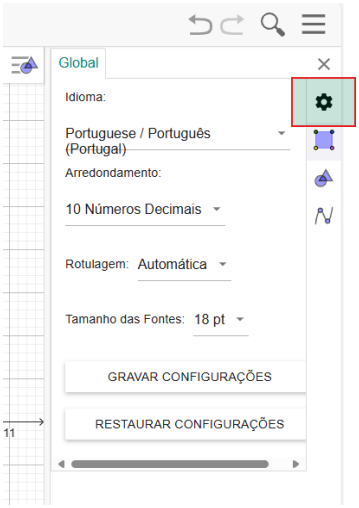


2. **Making the Square Root More Visible:**
   - Select side [AB] change the color and thickness of the line .



Step 6: Change the number of decimal places for the side and area measurements.

1. Choose “settings” → “text” → “rounding” → 15 decimal places. Also change the font size to **Large** and click on **B** (bold).



Step 7: Test and Save the Applet

Move the slider and see how the square's area and side measurement change.

Step 8: Questionnaire (move the selector and answer the following questions)

1- Knowing that a square has an area of 49 cm², what is the length of the side of this square?

2- Consider a square with an area of 24 cm². Can the length of the side of this square be written as a natural number or a decimal ?

3- side of a square with area 31 fall between ? Justify.

Good job!