**Title**: Computing the Area of a Circle  
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**Description**: This program calculates and displays the area of a circle using a radius provided by the user.

**Initial Algorithm**

Get the radius

Calculate the area of the circle

Display the area of the circle

**Data Requirements**:

Attributes:

PI – This is the decimal value of pi.

PI\_SYMBOL – This is the Unicode character for pi (π).

radius – This is the radius of the circle.

circle – This is the instantiated WeissLab2 object.

Behaviors:

setRadius – This will allow the radius to be changed if necessary, and will return the new radius.

getRadius – This will allow the radius to be retrieved outside the object.

getArea – This will calculate and return the area of the circle.

factoredArea – This will generate the area as a factor of pi, so it can be seen in a simplified and mathematically precise visual form.

**Formulas**:

PI = 3.14159265

PI\_SYMBOL = '\u03C0'

area = PI \* radius2

**Refined Algorithm**

Get the radius (radius?)

Make sure radius is valid, or ask again

Create a WeissLab2 object using the radius to perform the calculations

Define PI

Calculate the area of the circle (getArea())

getArea { PI \* (radius \* radius) }

Generate the area as a factor of pi (factoredArea())

factoredArea { radius \* radius + PI\_SYMBOL }

Display area of circle as a decimal and as a factor of pi (area(), factoredArea())