

# Work Collaboratively


## Step 1:

A ferris wheel is an amusement park ride comprised of a large wheel rotating on an axis. There are cars or compartments where people can sit or stand that are evenly spaced about the circumference of the circle. The wheel rotates slowly taking passengers on a ride around the circumference of the circle.

Along with your partner, please select ~~Two~~ of the following famous ferris wheels to research:

1. Singapore Flyer
2. London Eye
3. Star of Nanchang

*Chose any 2*

You will need to find the diameter and number of compartments (or cars) for the  you chose in order to be able to complete the calculations section of the assignment. Once you both have your information, move on to step 2.

## Step 2:

Complete the following tasks and calculations. You must show all work and steps to receive full credit. Make sure to split the work between yourself and your partner and to provide proof of your collaboration.

1. Name of the ferris wheel
2. Diameter of the wheel (in meters)
3. Number of cars or compartments
4. Circumference of the wheel (in meters)
5. Area of the wheel (in meters)
6. Measure of a central angle in degrees
7. Measure of a central angle in radians
8. Arc length between two cars or compartments

### 9. Area of a sector between two cars or compartments

#### Step 3:

10. If a smaller replica of the ferris wheel was constructed, what conclusions could you draw about the central angle of the original wheel and replica? What conclusions could you draw about the arc length of the original ferris wheel and replica?
11. Imagine the center of the ferris wheel is located at  $(0, 0)$  on a coordinate grid, and the radius lies on the x-axis. Write an equation of a circle for your ferris wheel, and sketch an image of what your ferris wheel would look like on the grid.

Exchange one of your responses with your partner, and provide a constructive critique of their reflection. Make sure to submit your response to these questions along with your partner's reflection and your critique.

#### Step 4:

Submit the following to your instructor:

1. Your calculations and work for step 2.
2. Your answers to the reflection questions for step 3.
3. Your partner's reflection and your critique for step 3.
4. Your proof of collaboration. Examples of evidence include, but are not limited to, the following: discussion threads from a blog, wiki, discussion area, instant message, email, etc.

\*Note: Please submit the written portion of this assignment using a word processing document or by copying and pasting into the assignment box.

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# Essential Questions

Give 2 answer each question

- How do you derive the equation of a circle?
- How do you identify the center and radius of a circle?
- How do you define the radian measure of an angle?
- How are arc length and area of a sector related to proportionality?

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