Exploring Circumference and Arc Length
With Geometer’s Sketchpad

**Part 1**

1. Draw *Line* (not segment) 
2. Draw a circle with center A and radius *AB*
3. Plot point C at the intersection of the circle and the line (opposite
4. Select point B and C and measure the distance of the diameter.
5. Select the circle and measure the circumference.
6. Select “Calculate” from the Measure menu.
7. Calculate the Circumference divided by*BC*. Move point B and observe how the numbers change. Complete this equation

 What do we call this number?

**Formula for Circumference:**

**Part 2:**

1. Now move point B until you have a Circumference of 36
2. Plot point *D* on the circle and construct segment *AD*.
3. Now plot point *E* on the circle and place it just above point B.
4. Select the circle, point B, point E, and point D (in that order).
5. Measure Arc Angle.
6. Select the circle, point B, point E, and point D (in that order).
7. Measure Arc Length.

Now move point *D* to make the angles below.
Record the ratio of the arc length and the circumference

(round to the nearest whole # and simplify)

|  |  |
| --- | --- |
| Measure of Arc |  |
| 90 |  |
| 180 |  |
| 270 |  |
| 60 |  |
| 120 |  |

**Arc Length Formula : Arc Length =**