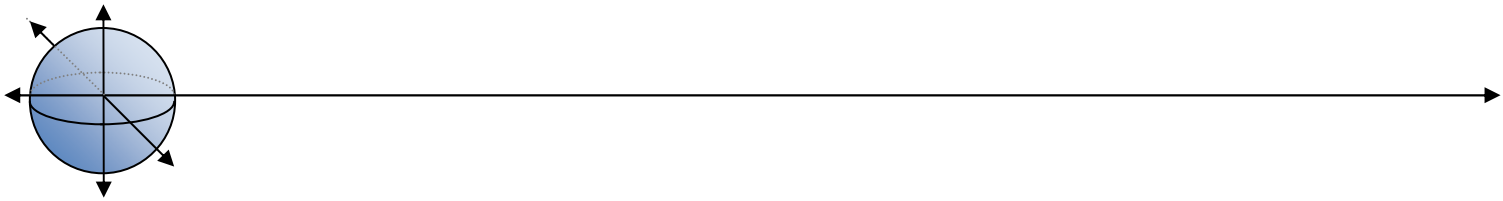

Exploring Circumference and Arc Length

With Geometer's Sketchpad

Part 1

1. Draw *Line* (not segment) $\overleftrightarrow{AB}$
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

$$\frac{Circumference}{CB} \approx$$

What do we call this number?

Formula for Circumference:

Part 2:

8. Now move point B until you have a Circumference of 36
9. Plot point *D* on the circle and construct segment *AD*.
10. Now plot point *E* on the circle and place it just above point B.
11. Select the circle, point B, point E, and point D (in that order).
12. Measure Arc Angle.
13. Select the circle, point B, point E, and point D (in that order).
14. 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	$\frac{ArcLength}{Circumference}$
90	
180	
270	
60	
120	

Arc Length Formula : **Arc Length =**