
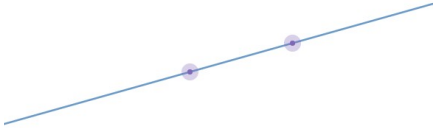

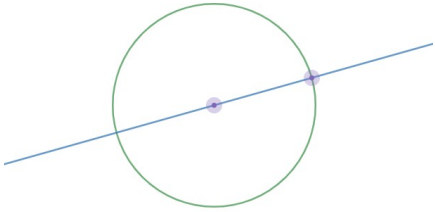

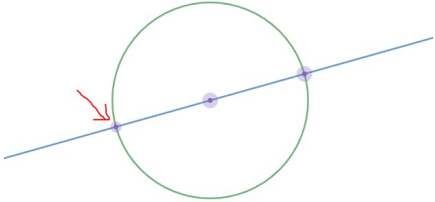

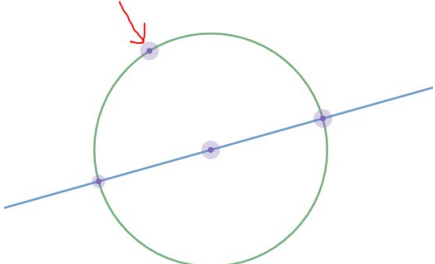

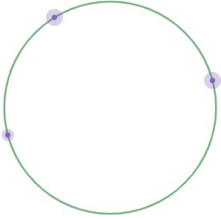
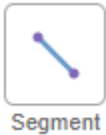
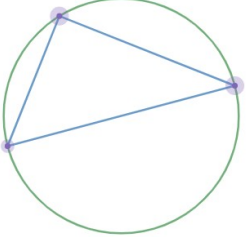

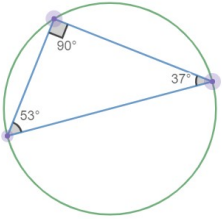



## Activity – Angles and Triangles in Circles

### Activity 1: “Diameter Triangle”

Open the Desmos Geometry Tool ( <https://www.desmos.com/geometry> ) and follow these instructions to create the diagram.

Construct a line.	 Line	
Construct a circle on the line by clicking the two points on the line.	 Circle	
Place a point where the line passes through the other side of the circle.	 Point	
Place another point anywhere else on the circle.	 Point	


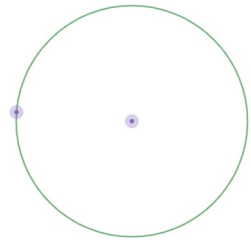

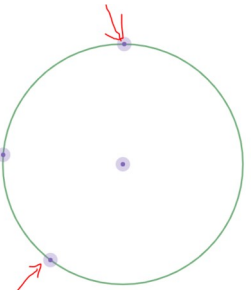

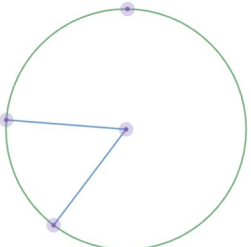

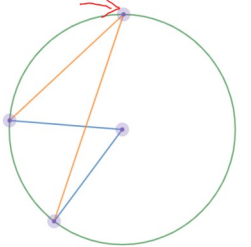

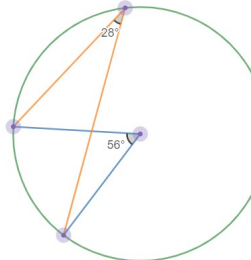
<p>Hide the line by selecting it and choosing “hide”. Do the same with the center of the circle.</p>		
<p>Use the Segment tool to make the sides of a triangle. (Click one point, then the other, to create the segment.)</p>		
<p>Measure the angle in each corner using the angle tool. (You must click <b>three</b> points to measure the angle; the second point is where it is measured.)</p>		

Now that the diagram is finished, choose the select tool  and start playing with the points on the triangle. (Move them around! Make the circle bigger or smaller!)

1. What changes when you move the points around?
2. What stays the same when you move the points around?
3. Complete the sentence:

When you draw a triangle in a circle using the diameter and one other point on the circle, the triangle always contains a \_\_\_\_\_ angle.

**Activity 2: Center and Circumference Angles.**

<p>Create a circle.</p>	 <p>Circle</p>	
<p>Create two more points along the circumference.</p>	 <p>Point</p>	
<p>Use the segment tool to connect <b>two</b> of the points on the circumference to the <b>center</b>.</p>	 <p>Segment</p>	
<p>Use the segment tool to connect <b>the same two points</b> on the circumference to <b>other point</b>.</p>	 <p>Segment</p>	
<p>Measure the angle at the center and at the third point.</p>	 <p>Angle</p>	


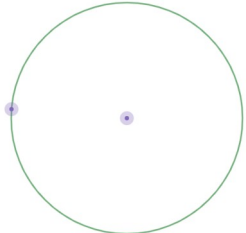

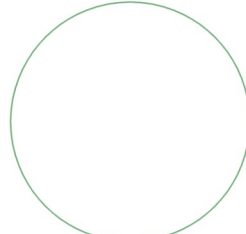

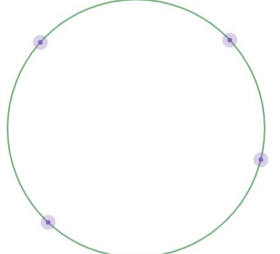

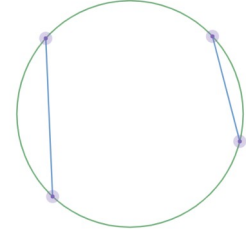

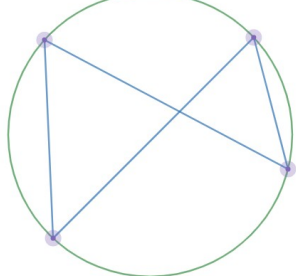
Now that you've made the diagram, play! Choose the **select** tool. Move the points around and compare the center angle with the other angle. Fill in at least 3 more rows in the table.

Angle on Circumference	Angle at Center
28	56

How does the size of the center angle compare to the size of the angle on the circumference?

### Activity 3: Chords

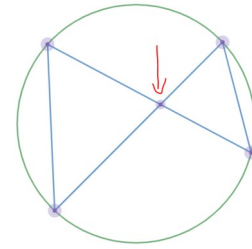
A **chord** is a line segment that connects two points on the circumference of a circle.

Create a circle.	 Circle	
Hide the center point and the point on the circumference.	 1 Object Selected Select <input type="button" value="Hide"/>	
Add <b>four</b> points to the circumference of the circle.	 Point	
Make two <b>chords</b> by connecting two pairs of points with line segments.	 Segment	
Make two triangles by “crossing” two segments between the chords.	 Segment	

Place a point where the lines cross.



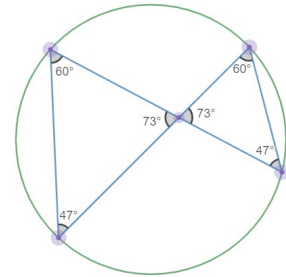
Point



Measure all the angles.



Angle



Now that you've made the diagram, play! Choose the select tool. Move the points around and compare the angles in the two triangles.

How do the angles in the two triangles compare to each other?