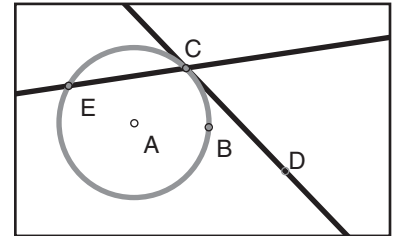


**LESSON 11-4** **Technology Lab Recording Sheet** pp. 780–781  
**Explore Angle Relationships in Circles**

**Try This**

**Activity 1**

5. Drag  $E$  around the circle and examine the changes in the measures. Fill in the angle and arc measures in the chart below. Try to create acute, right, and obtuse angles.



$m\angle DCE$					
$m\widehat{CBE}$					
Angle type					

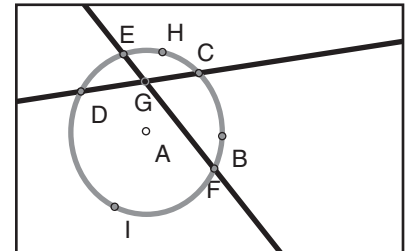
Can you make a conjecture about the relationship between the angle measure and the arc measure?

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**Activity 2**

5. Fill in the angle and arc measures in the chart below. Try to create acute, right, and obtuse angles.



$m\angle DGF$					
$m\widehat{CHE}$					
$m\widehat{DIF}$					
Sum of arcs					

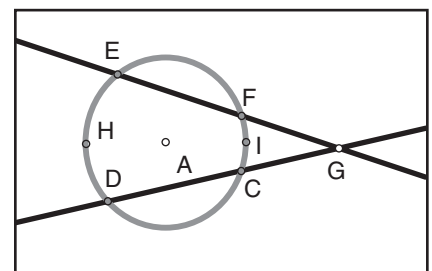
Can you make a conjecture about the relationship between the angle measure and the two arc measures?

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**Activity 3**

3. Drag points around the circle and examine the changes in measures. Fill in the angle and arc measures in the chart below.



$m\angle FGC$					
$m\widehat{CIF}$					
$m\widehat{DHE}$					
number of arcs					

**LESSON** **Technology Lab Recording Sheet** pp. 780–781

**11-4** **Explore Angle Relationships in Circles** continued

Can you make a conjecture about the relationship between the angle measure and the two arc measures?

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**Try This**

1. How does the relationship you observed in Activity 1 compare to the relationship between an inscribed angle and its intercepted arc?

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2. Why do you think the radius  $\overline{AC}$  is needed in Activity 1 for the construction of the tangent line? What theorem explains this?

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3. In Activity 3, try dragging points so that the secants become tangents. What conclusion can you make about the angle and arc measures?

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4. Examine the conjectures and theorems about the relationships between angles and arcs in a circle.

What is true of angles with a vertex *on* the circle?

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What is true of angles with a vertex *inside* the circle?

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What is true of angles with a vertex *outside* the circle?

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Summarize your findings.

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5. Does using geometry software to compare angle and arc measures constitute a formal proof of the relationship observed?

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