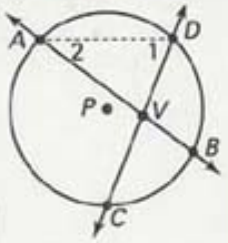
Activity 2
Vertex Inside Circle—Two Secants (Case 2)

YOU WILL NEED

no special tools

1. $\angle AVC$ is an exterior angle of $\triangle ADV$. What is the relationship between the measure of $\angle AVC$ and the measures of $\angle 1$ and $\angle 2$?



Two secants

TABLE PROOF

2. Copy and complete the following table:

$m\overset{\frown}{AC}$	$m\overset{\frown}{BD}$	$m\angle 1$	$m\angle 2$	$m\angle AVC$	$m\angle DVB$
160°	40°	80°	20°	100°	100°
180°	70°	?	?	?	?
200°	60°	?	?	?	?
$x_1°$	$x_2°$	?	?	?	?

As you justify each entry of the table for the general case, you are also proving a theorem.

3. Based on your results, complete the theorem below.

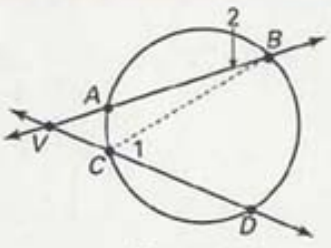
Theorem

CHECKPOINT ✔

The measure of an angle formed by two secants or chords that intersect in the interior of a circle is __?__ the __?__ of the measures of the arcs intercepted by the angle and its vertical angle. **9.4.2**

Activity 3
Vertex Outside Circle—Two Secants (Case 3b)

1. $\angle 1$ is an exterior angle of $\triangle BVC$. What is the relationship between the measure of $\angle 1$ and the measures of $\angle 2$ and $\angle AVC$?



Two secants

TABLE PROOF

2. Copy and complete the following table:

$m\overset{\frown}{BD}$	$m\overset{\frown}{AC}$	$m\angle 1$	$m\angle 2$	$m\angle AVC$
200°	40°	100°	20°	80°
250°	60°	?	?	?
100°	50°	?	?	?
$x_1°$	$x_2°$	?	?	?

As you justify each entry of the table for the general case, you are also proving a theorem.

3. Based on your results, complete the theorem below.

Theorem

CHECKPOINT ✔

The measure of an angle formed by two secants that intersect in the exterior of a circle is __?__ the __?__ of the measures of the intercepted arcs. **9.4.3**

You will explore cases 3a and 3c in Exercises 27–37.