LESSON MAKER PRO

Circle Sight Lines

Use arcs to find angles.

HIGH SCHOOL · G.C.1.3

G.C.1.3 "Apply the properties of circles and relationships among angles, arcs, and distances in a circle among radii, chords, secants, and tangents to solve problems using algebraic and logical reasoning."

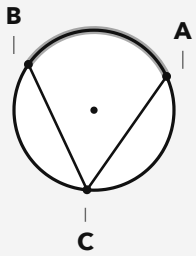
NAME _____ DATE _____

THE BIG IDEA

An inscribed angle has its vertex on a circle and its sides are chords. Its measure is half the measure of the arc between the other endpoints.

WORKED EXAMPLE

The highlighted arc AB measures 120°. Find ∠ACB.



1. ∠ACB intercepts arc AB.
2. An inscribed angle is half its intercepted arc.
3. 120° / 2 = 60°

Answer: 60°

PRACTICE 4 problems

1 An inscribed angle intercepts a 74° arc. Find the angle.

ANSWER _____

2 An inscribed angle measures 28°. Find its intercepted arc.

ANSWER _____

3 A central angle measures 138°. Find an inscribed angle that intercepts the same arc.

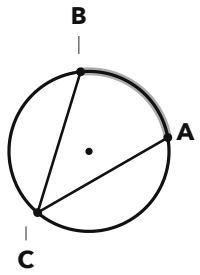
ANSWER _____

4 An inscribed angle measures (x + 18)°. Its intercepted arc measures (3x + 14)°. Find x.

ANSWER _____

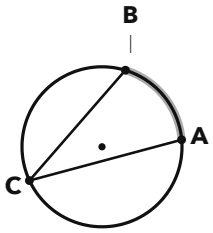
APPLY IT Show your work

1 At a circular skate park, the highlighted arc AB measures 86°. Find the angle between sight lines CA and CB.



ANSWER _____

2 On a circular concert stage, sight lines CA and CB make a 34° angle. Find the measure of the highlighted arc AB.



ANSWER _____

CHALLENGE One step up

An inscribed angle measures (x + 27)°. Its intercepted arc measures (4x + 16)°. Find x, the angle, and the arc.

WORK SPACE AND ANSWER

ANSWER KEY

Circle Sight Lines

HIGH SCHOOL · G.C.1.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	An inscribed angle intercepts a 74° arc. Find the angle.	**37°**
2	An inscribed angle measures 28°. Find its intercepted arc.	**56°**
3	A central angle measures 138°. Find an inscribed angle that intercepts the same arc.	**69°**
4	An inscribed angle measures (x + 18)°. Its intercepted arc measures (3x + 14)°. Find x.	**22**

PART 2 · APPLY IT

1. **43°** The angle at C intercepts arc AB. Half of 86° is 43°.
2. **68°** The angle at C intercepts arc AB. Double 34° to get 68°.

CHALLENGE

x = 19; angle = 46°; arc = 92°

For the algebra problems, accept any correct equation showing that the arc measure is twice the inscribed angle.