

Geometry · Circles: Chords, Arcs and Inscribed Angles · Test

Common Core G-C.A.1, G-C.A.2 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

This 45-minute test covers circles for Geometry (G-C.A.1 and G-C.A.2). It has nine questions worth 20 points. Show every calculation, give exact values, and give a reason for each angle you find using a circle theorem.

Test information

- **Grade:** Geometry
- **Chapter:** Circles: Chords, Arcs and Inscribed Angles
- **Common Core:** G-C.A.1, G-C.A.2
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 2 pts; Question 5: 3 pts; Question 6: 2 pts; Question 7: 2 pts; Question 8: 3 pts; Question 9: 2 pts)

Question 1: Similar circles (2 points)

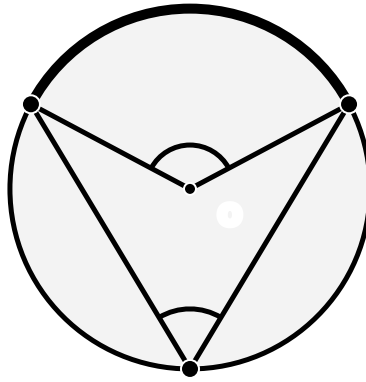
Circle P has radius 6 and circle Q has radius 15.

- A translation followed by a dilation maps P onto Q . Find the scale factor. (1 point)
- The circumference of P is 12π . Find the circumference of Q . (1 point)

Question 2: Central and inscribed angles (2 points)

In the circle, arc AB measures 124° . Point O is the center and C is on the circle.

- Find $m\angle AOB$. (1 point)
- Find $m\angle ACB$. (1 point)



Arc AB measures 124° .

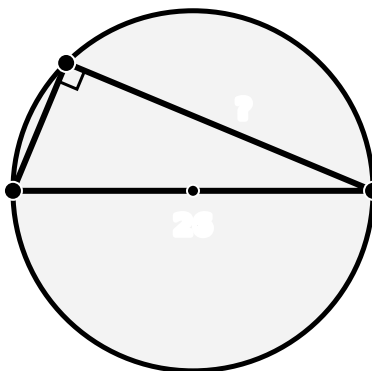
Question 3: Inscribed angle algebra (2 points)

An inscribed angle measures $(5x+2)^\circ$ and intercepts an arc that measures $(12x-12)^\circ$. Find x and the measure of the angle.

Question 4: Triangle in a semicircle (2 points)

Segment AB is a diameter of length 26. Point C is on the circle with $AC = 10$.

- Find $m\angle ACB$. (1 point)
- Find BC . (1 point)

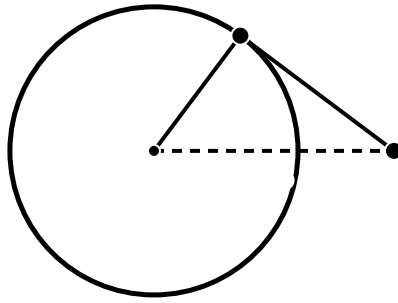


Segment AB is a diameter.

Question 5: Tangent and radius (3 points)

Segment PT is tangent to the circle with center O at T . The radius is 9 and $OP = 15$.

- Find $m\angle OTP$. (1 point)
- Find PT . (1 point)
- If $m\angle TOP = 53^\circ$, find $m\angle OPT$. (1 point)



Segment PT is tangent to the circle at T .

Question 6: Tangents from a point (2 points)

Tangent segments PA and PB touch a circle at A and B , and $m\angle APB = 64^\circ$.

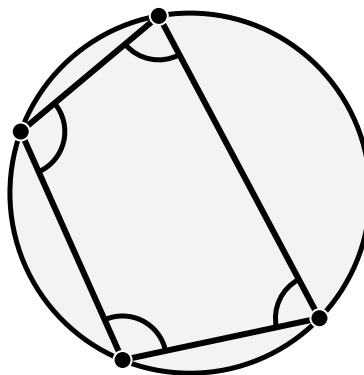
- Find the measure of minor arc AB . (1 point)
- Find the measure of major arc AB . (1 point)

Question 7: Chord and center (2 points)

A chord of length 40 is drawn in a circle with radius 25. Find the distance from the center of the circle to the chord.

Question 8: Inscribed quadrilateral (3 points)

Quadrilateral $ABCD$ is inscribed in a circle. The angles are $m\angle A = (3x+15)^\circ$, $m\angle B = (4y+2)^\circ$, $m\angle C = (5x-3)^\circ$ and $m\angle D = (2y+22)^\circ$. Find x , y and the measure of each angle.



Quadrilateral $ABCD$ is inscribed in a circle.

Question 9: Skating rink (2 points)

A circular skating rink is 60 feet across. Maya stands at A and Jamal stands at B , at opposite ends of a diameter. Noah stands at N on the edge of the rink, 36 feet from Maya.

- Find the measure of the angle formed by Noah's lines of sight to Maya and Jamal. (1 point)
- How far is Noah from Jamal? (1 point)