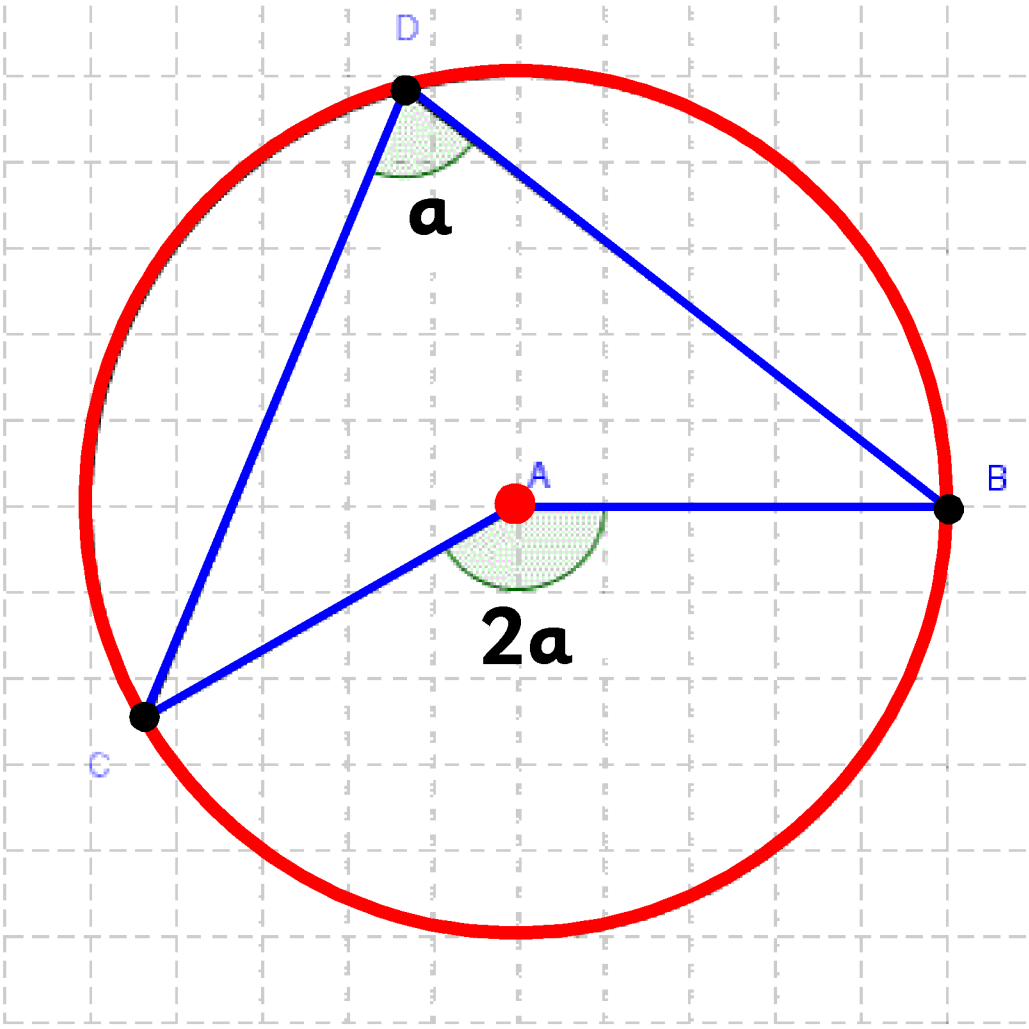
CIRCLE THEOREM 1



The angle at the centre is twice the angle at the circumference.

The angle made at the centre of the circle is exactly double the angle made at the edge of the circle from the same points.

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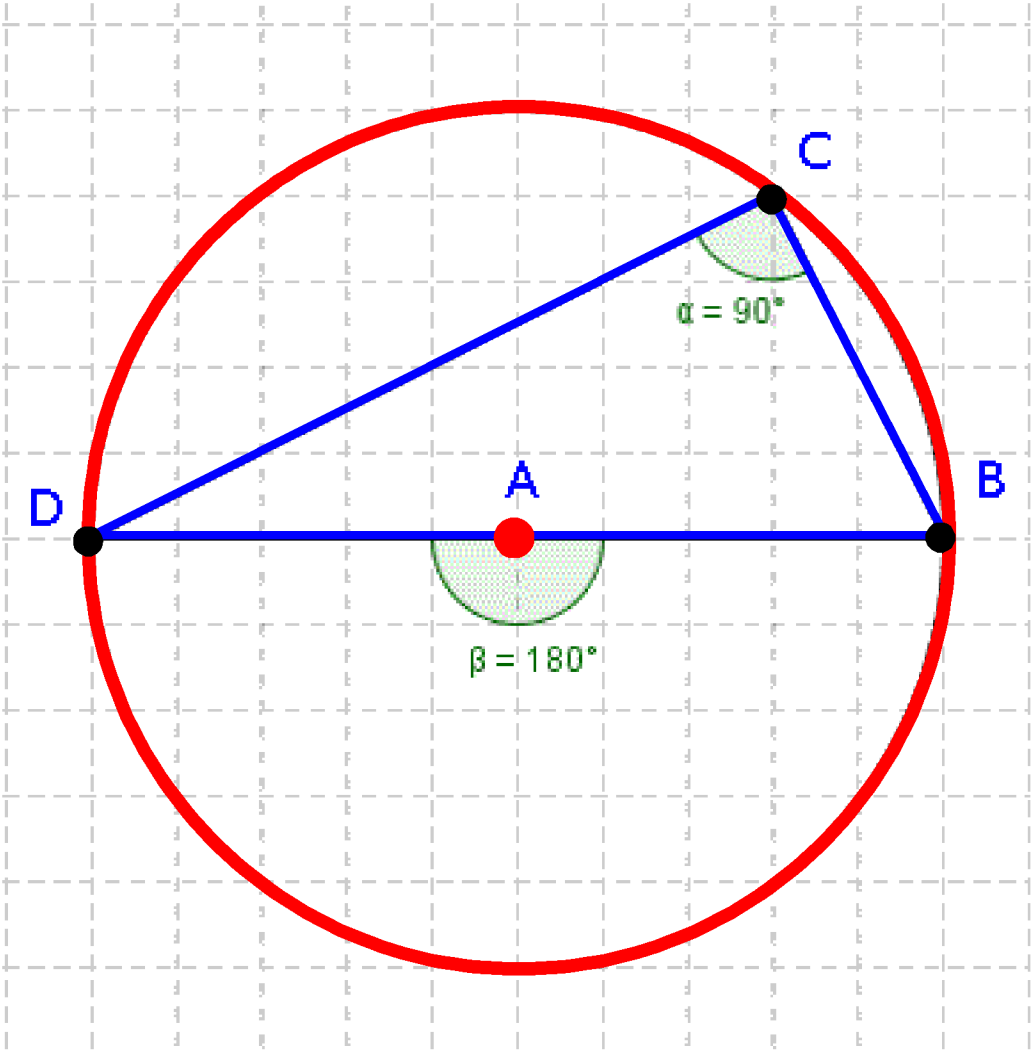
CIRCLE THEOREM 2



The angle in a semi-circle is 90°. This is a special case of theorem 1.

The angle at the centre is twice the angle at the circumference. As A is 180°, it follows that C is 90°.

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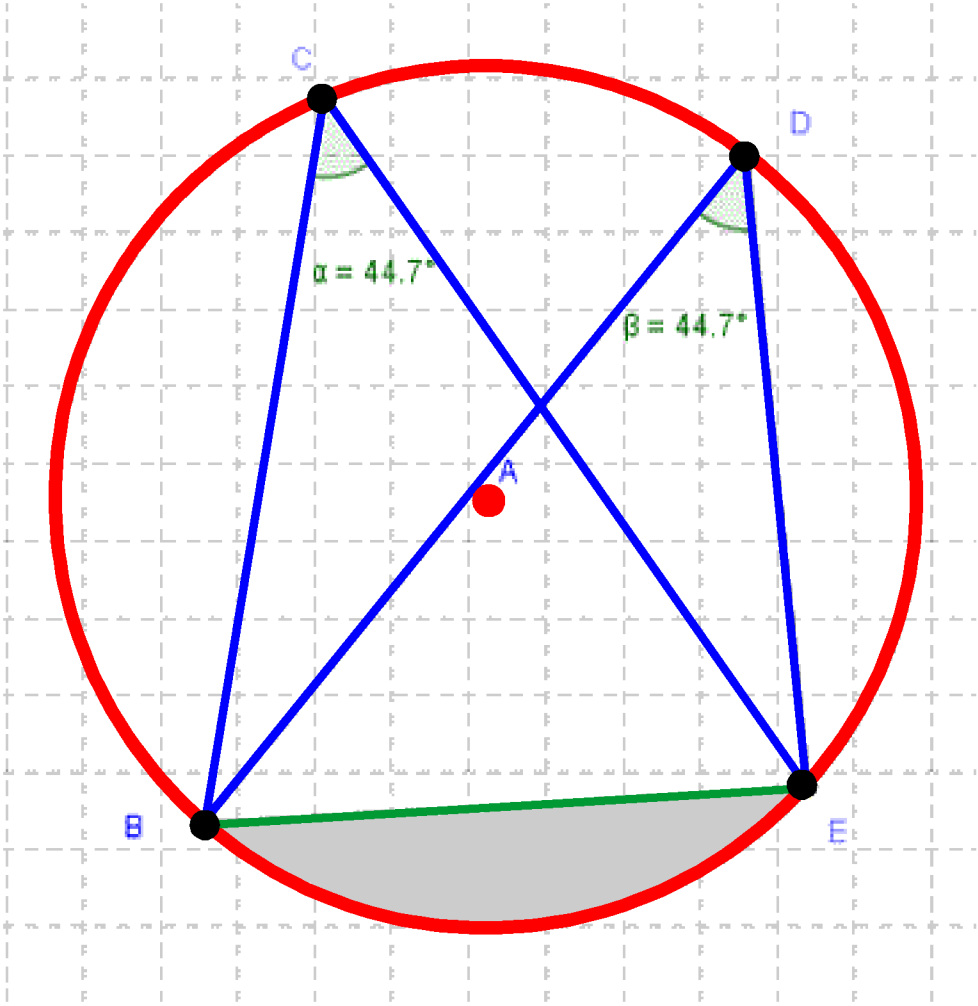
CIRCLE THEOREM 3



Angles in the same segment, and standing on the same chord are always equal.

Angles subtended (made) by the same arc at the circumference are equal.

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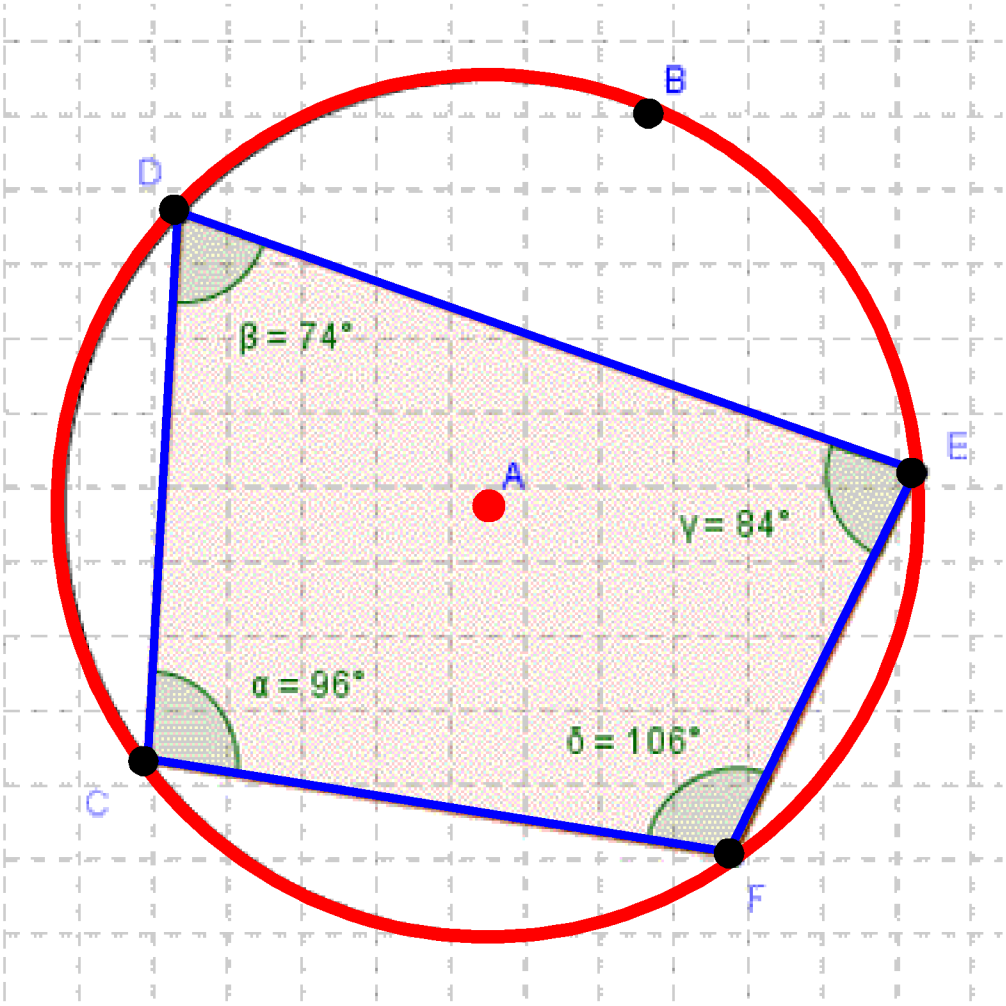
CIRCLE THEOREM 4



Opposite angles in a cyclic quadrilateral add up to 180°.

A cyclic quadrilateral is a quadrilateral whose vertices all touch the circumference of a circle.

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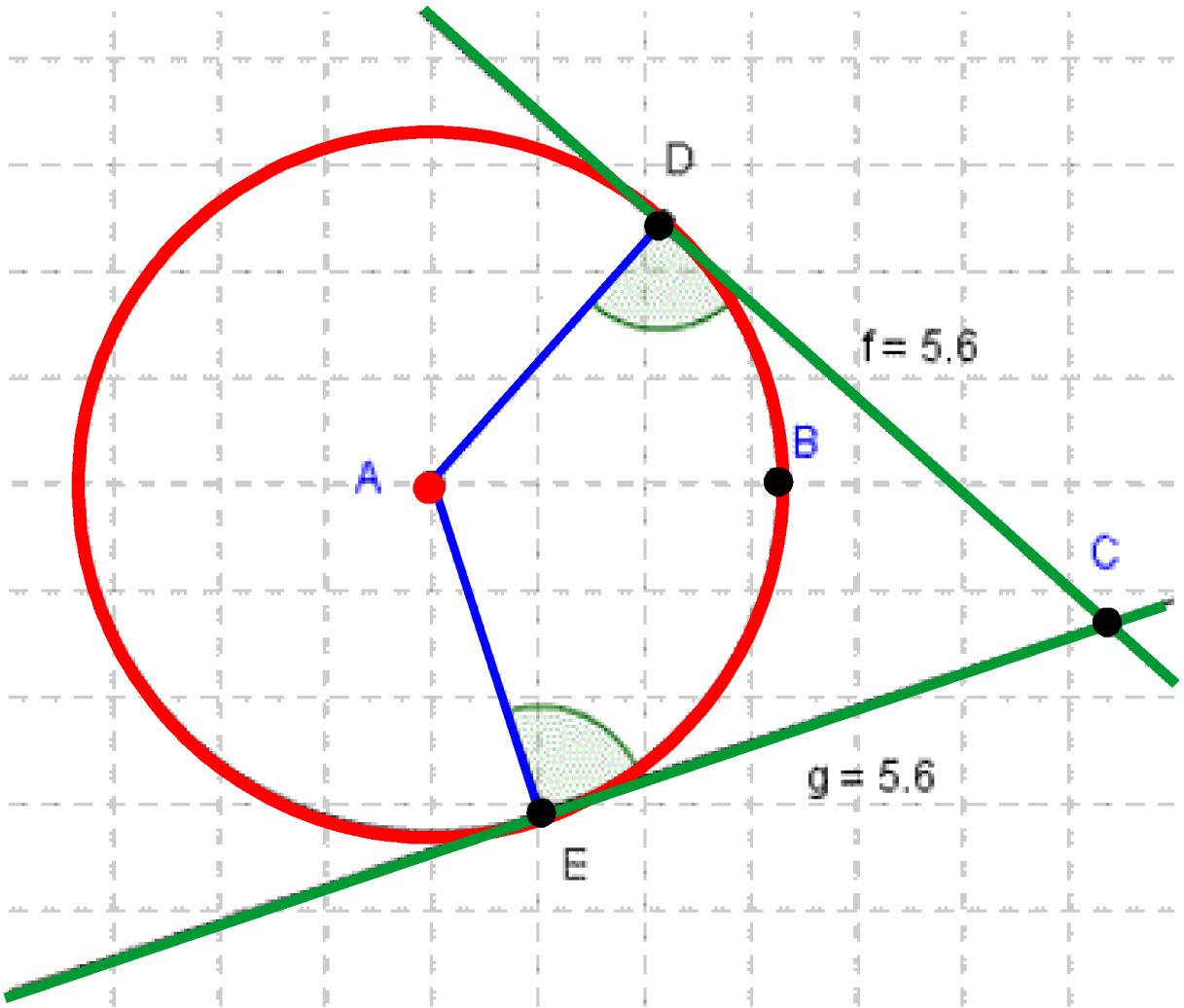
CIRCLE THEOREM 5



The lengths of the two tangents from a point to a circle are equal.

A tangent to a circle is a line which just touches the circle.

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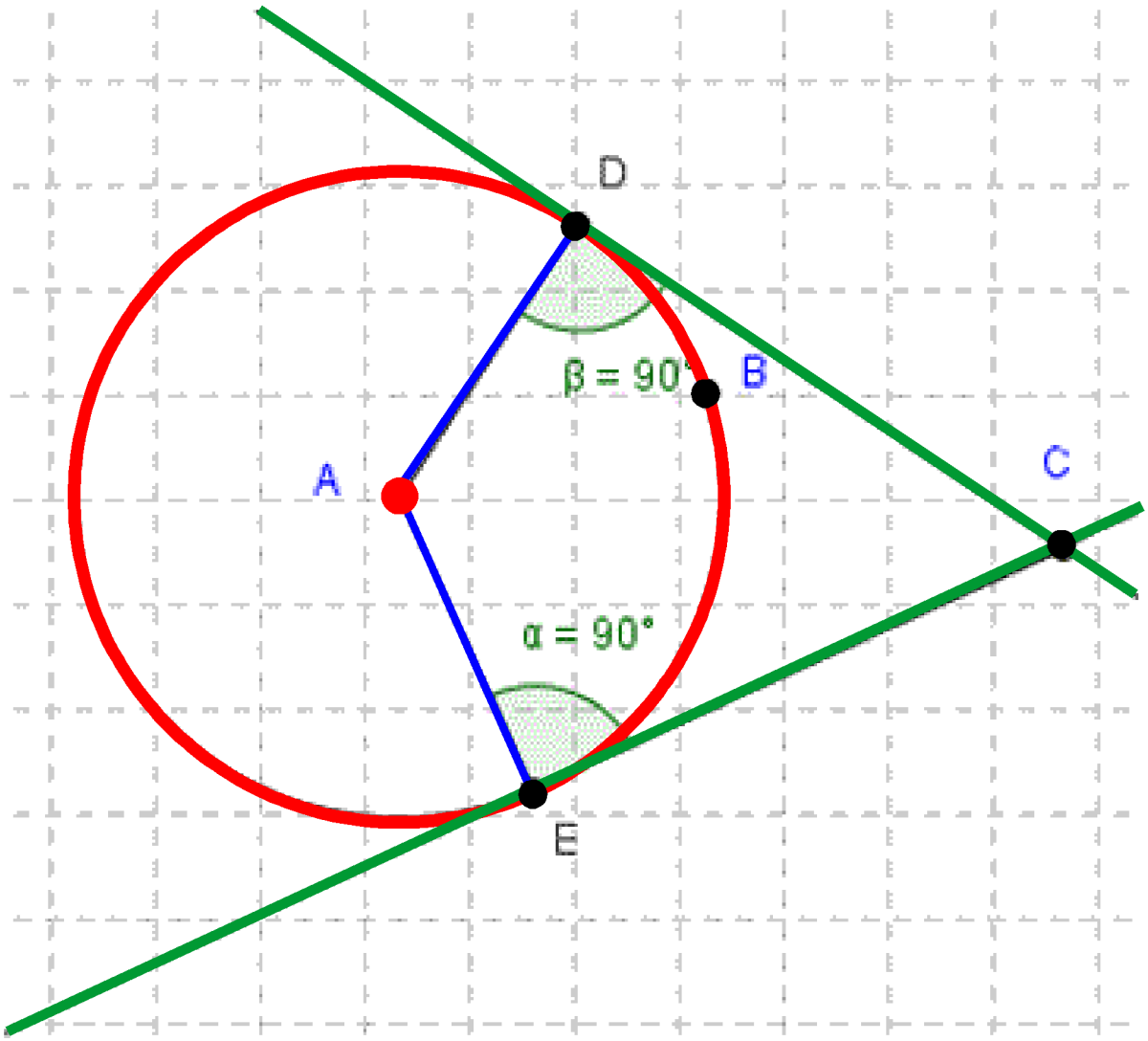
CIRCLE THEOREM 6



The angle between a tangent and a radius in a circle is 90°.

Remember:
A tangent is always at right angles to the radius where it touches the circle.

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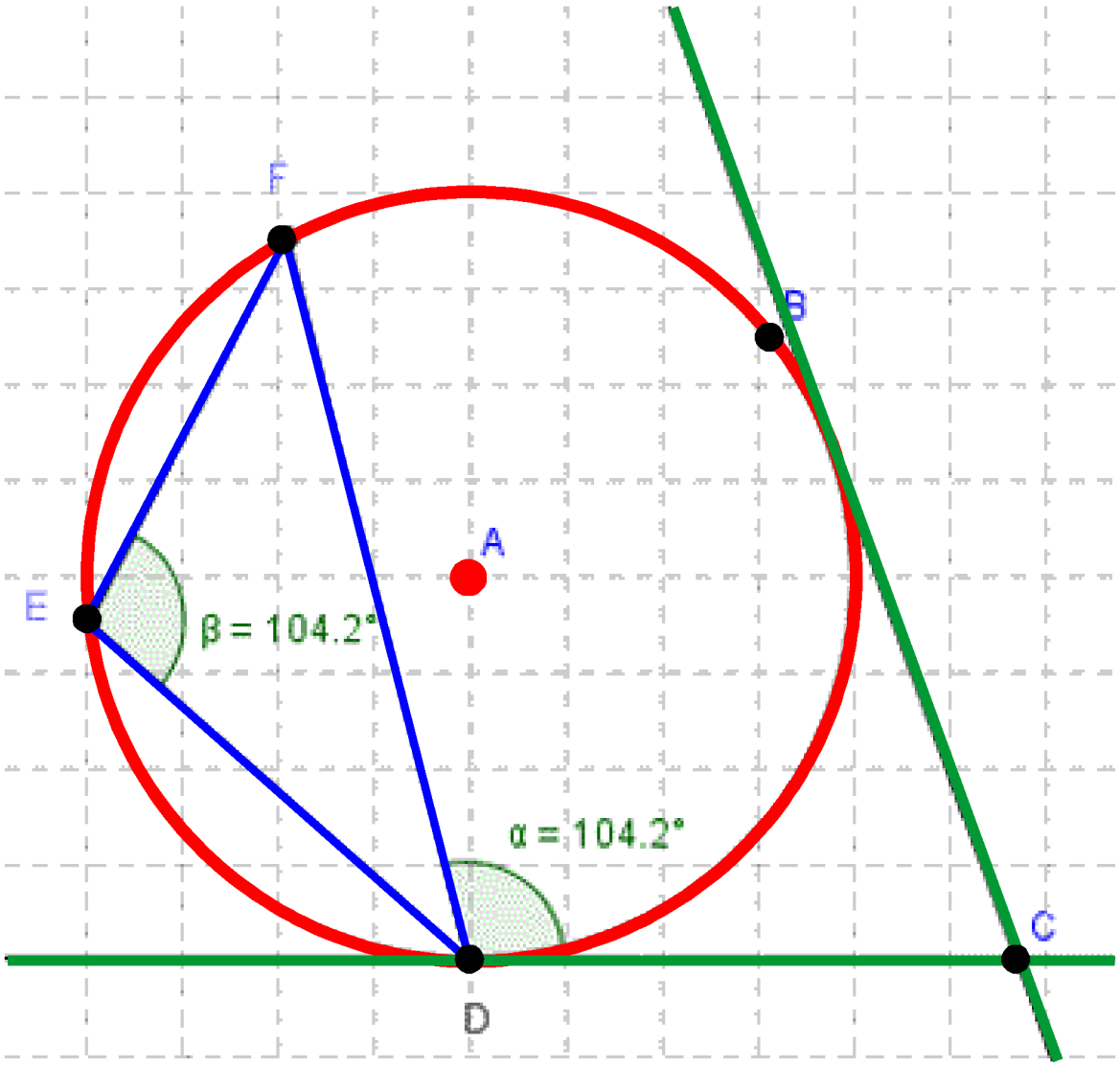
CIRCLE THEOREM 7



Alternate segment theorem:

The angle between the tangent and chord at the point of contact is equal to the angle in the alternate segment.

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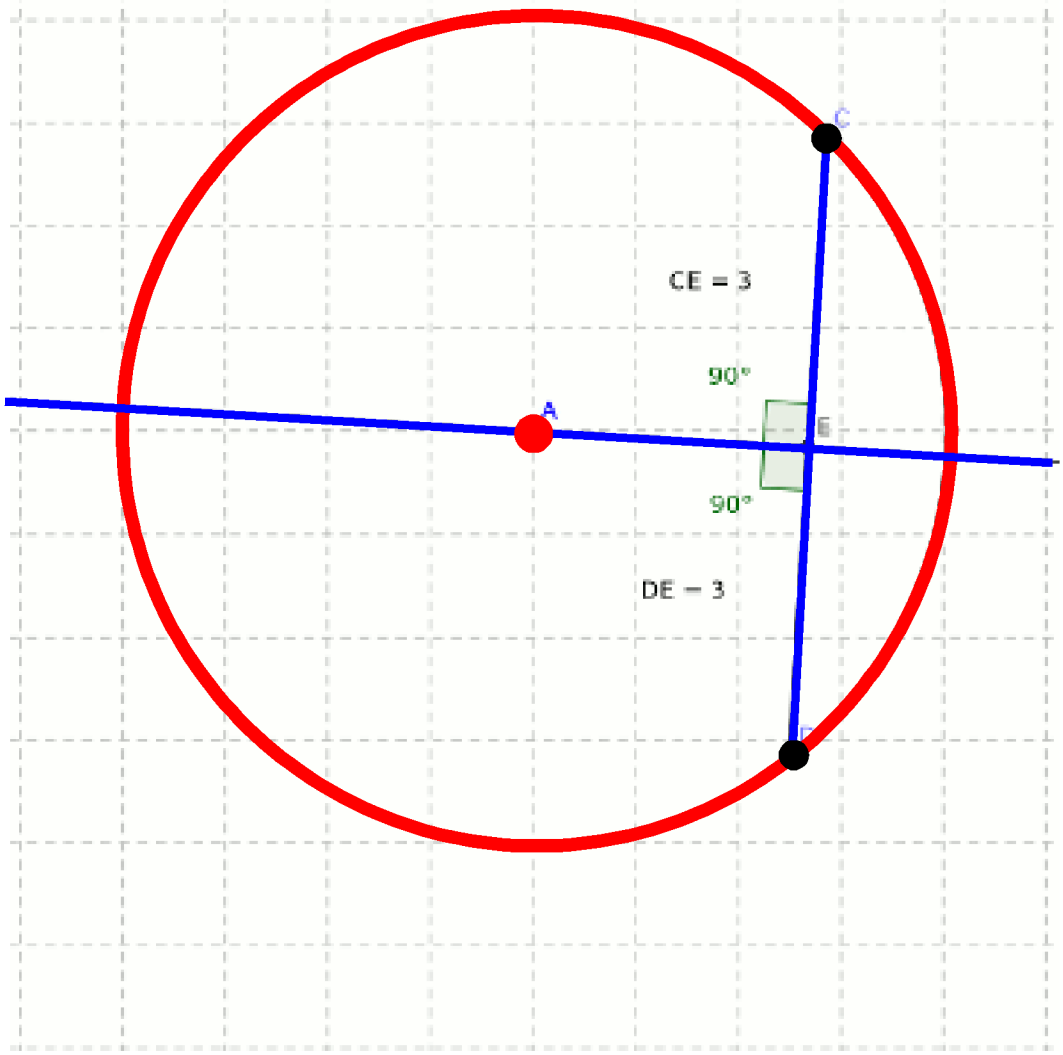
CIRCLE THEOREM 8



The perpendicular from the centre to the chord bisects the chord.

CIRCLE VOCABULARY

Circumference: the length of the edge around a circle.

Radius: a segment whose endpoints are the centre of a circle and a point on the circle.

Diameter: a straight line going through the centre of a circle connecting two points on the circumference.

Chord: a segment whose endpoints are 2 points on a circle.

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CIRCLE VOCABULARY

Arc: a portion of the circumference.

Tangent: a straight line that just touches the circle.

Sector: the portion of a circle enclosed by two radii and an arc.

Segment: the region between a chord of a circle and its associated arc.

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