

Circles – Similar Circles

G.C.A.2

Notes Section 12.2

Name _____

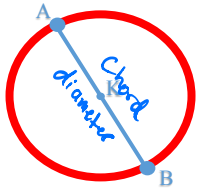
Circle: a set of all points in a plane that are a given distance from a given point in the plane.

Center: the point in the middle of the circle in which all points in the plane are equidistant.

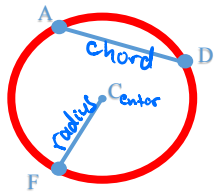
Chord: a segment that has endpoints on a circle.

Diameter: a chord that contains the center of the circle.

Radius: a segment with one endpoint at the center of a circle and the other endpoint on the circle.



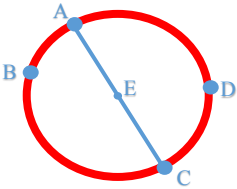
OK



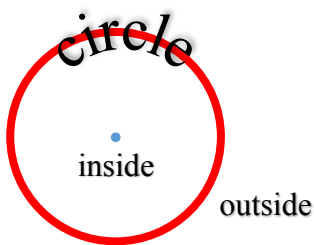
OC

Arc: an unbroken part of a circle.

- \widehat{AB} • **Minor Arc:** an arc that measures less than 180.
- \widehat{BAC} • **Major Arc:** an arc that measures more than 180.
- **Semicircle:** an arc that measures 180. \widehat{ADC}



A circle separates a plane into three parts: the interior, the exterior, and the circle itself.

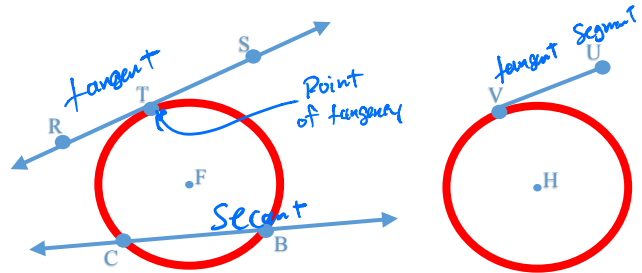


Tangent: a line that intersects a circle in exactly one point.

Point of Tangency: The point at which a tangent line intersects a circle

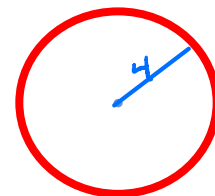
Tangent Segment: A segment that intersects a circle exactly once and if extended would still only intersect it once.

Secant: a line that intersects a circle in exactly two points.



AREA OF A CIRCLE

$$A_{\odot} = \pi r^2$$



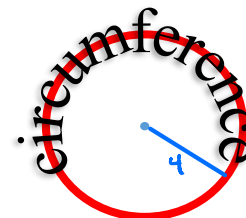
$$A_{\odot} = \pi r^2$$

$$= \pi (4)^2$$

$$A_{\odot} = 16\pi$$

CIRCUMFERENCE (PERIMETER)

$$C = 2r\pi = d\pi$$



$$C = 2(4)\pi$$

$$C = 8\pi$$

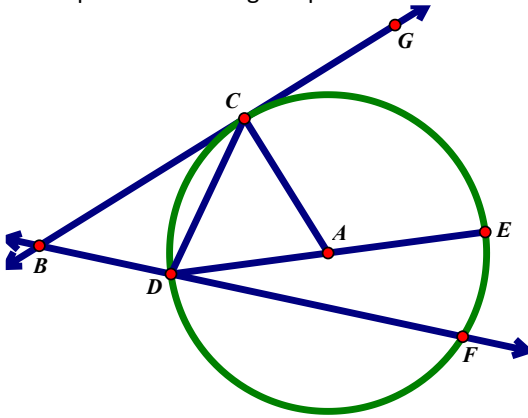
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Give an example of each using the picture.



Radius \overline{DA}

Diameter \overline{DE}

Chord \overline{DC}

Secant \overline{BF}

Minor Arc \widehat{DC}

Tangent \overline{BG}

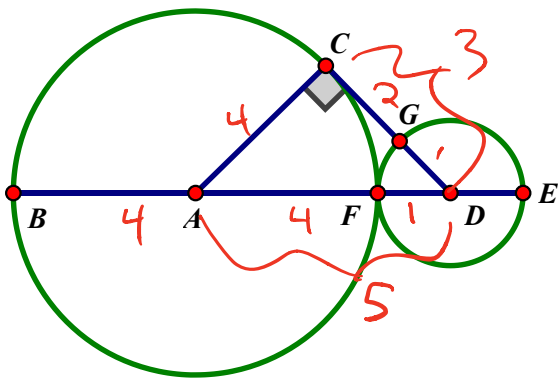
Center A

Exterior Point B

Major Arc \widehat{ACF}

Semi-Circle \widehat{AFE}

Circles A and D have radii of 4 cm & 1 cm respectively. Use this information to determine the missing values.



BF = 8

AD = 5

CD = 3

CG = 2

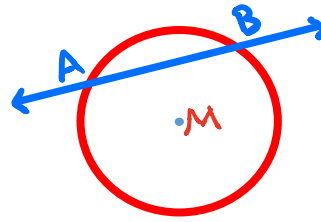
ΔACD is Pythagorean Triple

So $CD = 3$

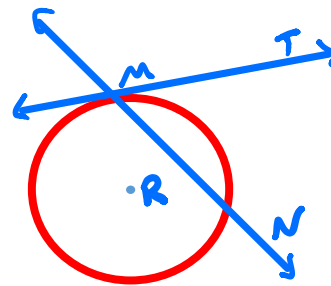
Perimeter of $\Delta ACD = 12 = 3 + 4 + 5$

Draw the following relationships.

Secant line \overline{AB} intersects $\odot M$ at points A and B.



Secant line \overline{MN} intersects tangent line \overline{TM} on Circle R.



Diameter \overline{AB} intersects tangent line \overline{GB} on circle M.

