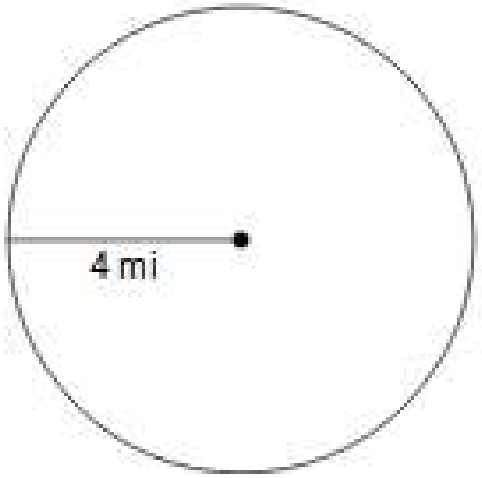
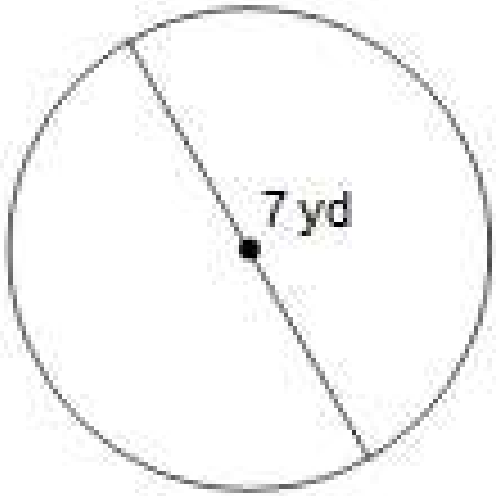
$$A = \pi r^2$$

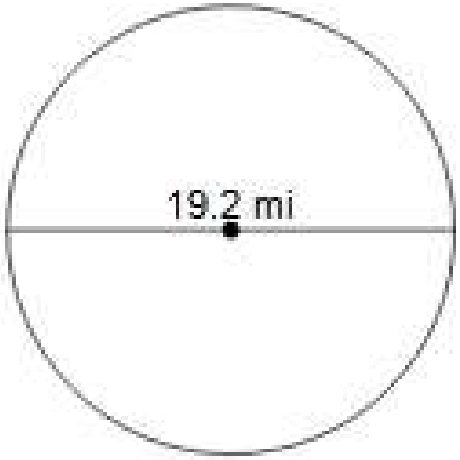
Find the area.
Use the π key.
Round to tenths.





$$C = \pi d$$

Find the circumference.
Use the π key.
Round to tenths.



MGSE9-12.G.GMD.1 Give informal arguments for geometric formulas.

a. Give informal arguments for the formulas of the circumference of a circle and area of a circle using dissection arguments and informal limit arguments.

b. Give informal arguments for the formula of the volume of a cylinder, pyramid, and cone using Cavalieri's principle.

Circle

Center

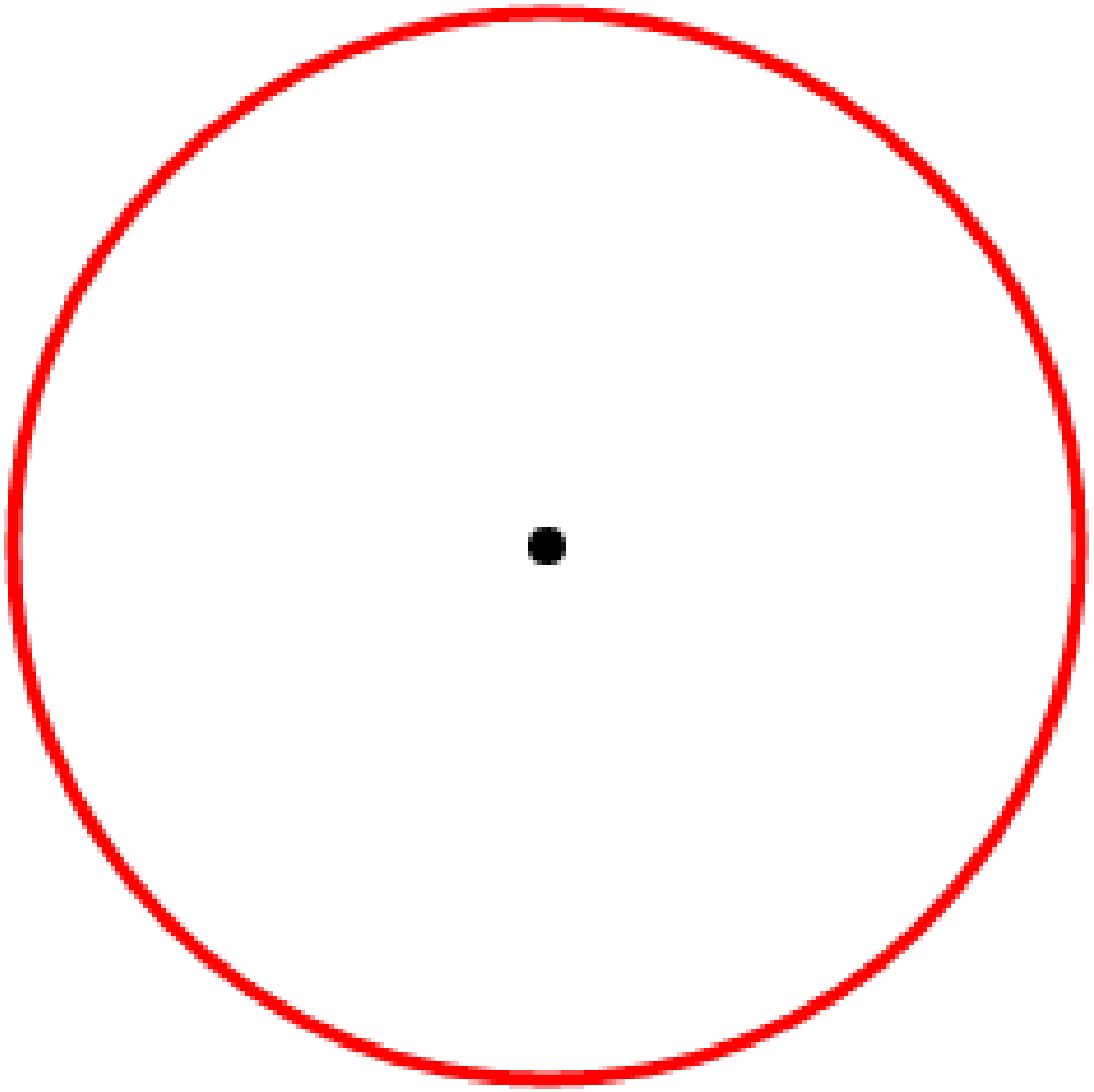
Radius

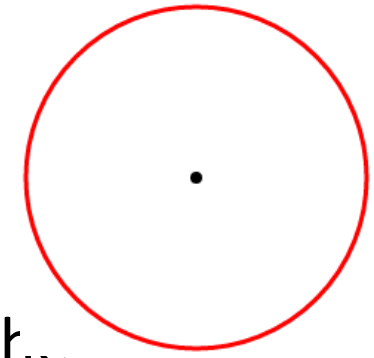
Chord

Diameter

Secant

Tangent





Circle - a round plane figure whose boundary (the circumference) consists of points equidistant from a fixed point (the **center**)

Radius - a straight line from the center to the circumference of a circle or sphere.

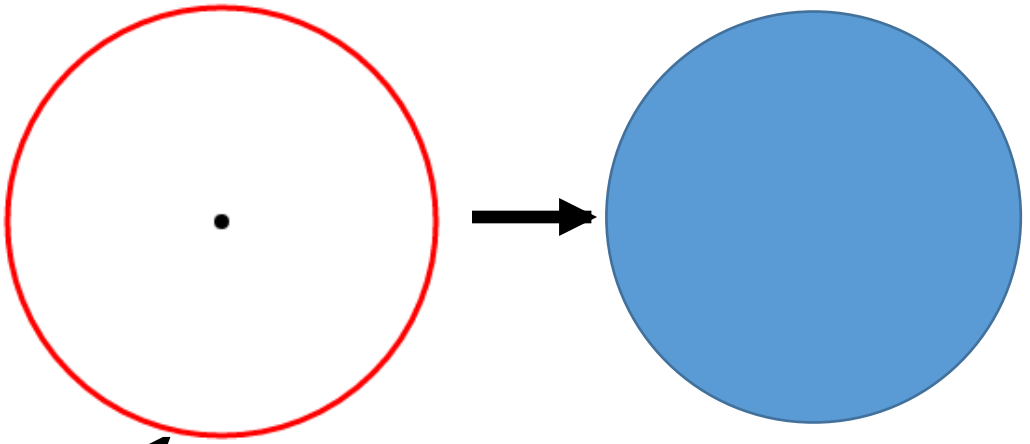
• **Chord**: a segment whose endpoints are on a circle

Diameter - a straight line passing from side to side through the center of a body or figure, especially a circle or sphere.

• **Secant Line**: a line in the plane of a circle that intersects a circle at exactly two points

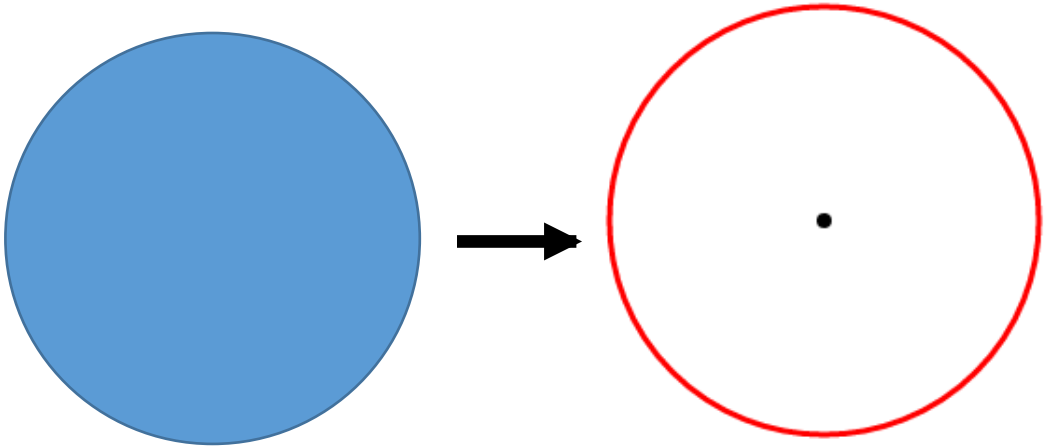
• **Tangent Line**: a line in the plane of a circle that intersects a circle at only one point, the point of tangency

Circumference -> Area



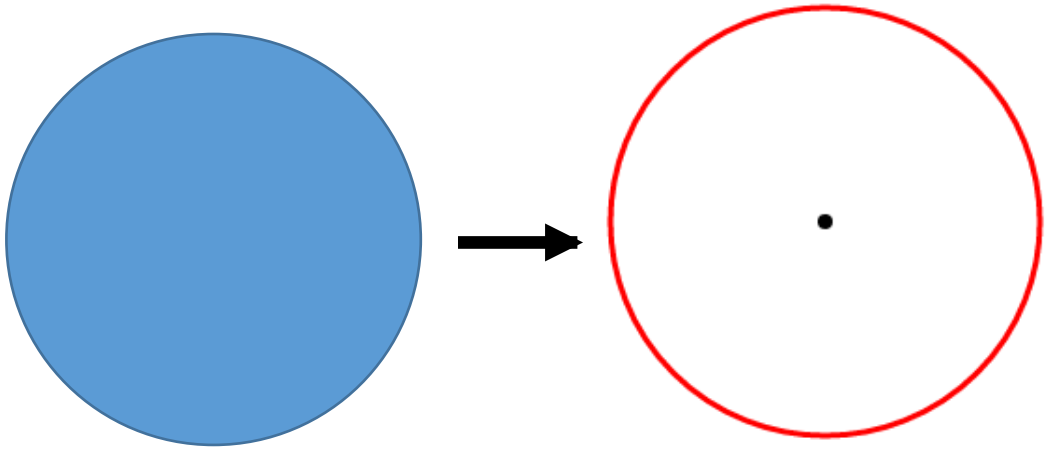
$$d = \frac{C}{\pi} \qquad r = \frac{1}{2}d \qquad A = \pi r^2$$

Area -> Circumference



$$r = \sqrt{\frac{A}{\pi}} \qquad d = 2r \qquad C = \pi d$$

Area -> Circumference



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• **Circumcenter**: The point of intersection of the perpendicular bisectors of the sides of a given triangle; the center of the circle circumscribed about a given triangle.

• **Circumscribed Circle**: a circle containing an inscribed polygon; for this unit the polygon will be a triangle and so the center of the circle will be the circumcenter of the triangle.

• **Composite Figures**: If a figure is made from two or more geometric figures, then it is called a Composite Figure.

• **Inscribed**: an inscribed planar shape or solid is one that is enclosed by and "fits snugly" inside another geometric shape or solid.

• **Inscribed Angle**: an angle whose vertex is on the circle and whose sides contain chords of a circle

Central Angle: an angle whose vertex is at the center of a circle

• **Inscribed Circle**: a circle enclosed in a polygon, where every side of the polygon is a tangent to the circle; specifically for this unit the polygon will be a triangle and so the center of the Inscribed Circle is the incenter of the triangle

• **Inscribed Polygon**: a polygon whose vertices all lie on a circle

• **Lateral Area**: The sum of the areas of the lateral (vertical) faces of a cylinder, cone, frustum or the like.

• **Major and Minor Arcs**: Given two points on a circle, the minor arc is the shortest arc linking them. The major arc is the longest.

• **Secant Segment**: a segment that contains a chord of a circle and has exactly one endpoint outside of the circle

• **Point of Tangency**: the point where a tangent line touches a circle.

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