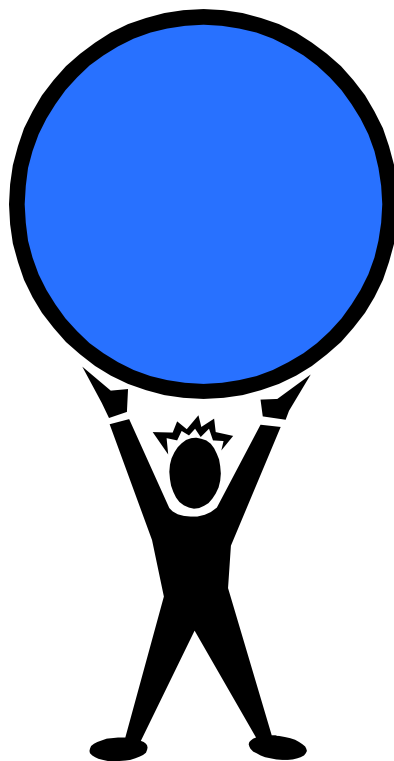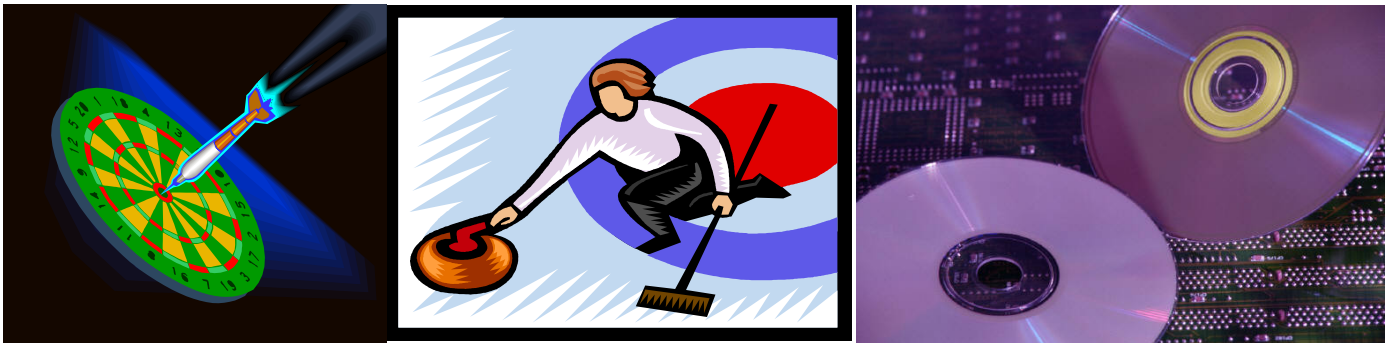# 5.1a—Defining Circles

- *A **circle** is the set of all points on a plane that are a fixed distance from a given point.*

  ○ *The fixed distance is known as the circle's **radius**.*

  ○ *The given point is known as the circle's **center**.*

 ○ *You name a circle using it's center point.*

5.1b—Defining Circles

● *If two circles have equal radii (plural of radius), then they are **congruent circles**.*

● *If two circles share the same center, then they are **concentric circles**.*

○ *Can you think of an example of concentric circles?*

5.1c—Defining Circles

- An **arc of a circle** contains two points and the part of the circle between them.

- The two points are called **endpoints**.

- You can think of an arc as the crust of a piece of (round) pizza.
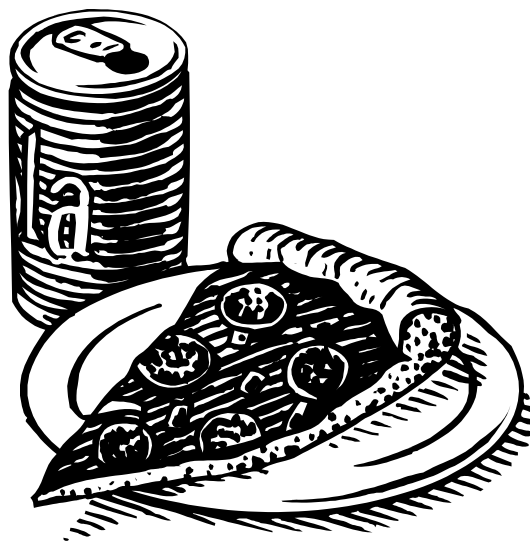
5.1d—Defining Circles

- *There are three different classifications for arcs: semi-circle, major arc, and minor arc.*

  ○ *A **minor arc** is an arc of a circle that is less than "half the circle." In the diagram on the next slide, notice that the minor arc is named using two letters. These letters are the endpoints of the arc.*

  ○ *A **semi-circle** is an arc of a circle whose endpoints are also endpoints of a diameter (it is "half the circle"). In the diagram on the next slide, notice that you name a semi-circle using three points. The first and last points are the endpoints of the arc. The second letter is a point between the two endpoints.*

5.1e—Defining Circles

○ A **major arc** is an arc of a circle that is more than "half the circle." In the diagram above, notice that the major arc is named using three letters similar to the semi-circle.

○ Why do you think that it is necessary to use three letters for a semi-circle and major arc, but only two for the minor arc?

C

Semi-circle $\overarc{BCD}$

Minor Arc $\overarc{BC}$

B

O

D

Major Arc $\overarc{CBD}$
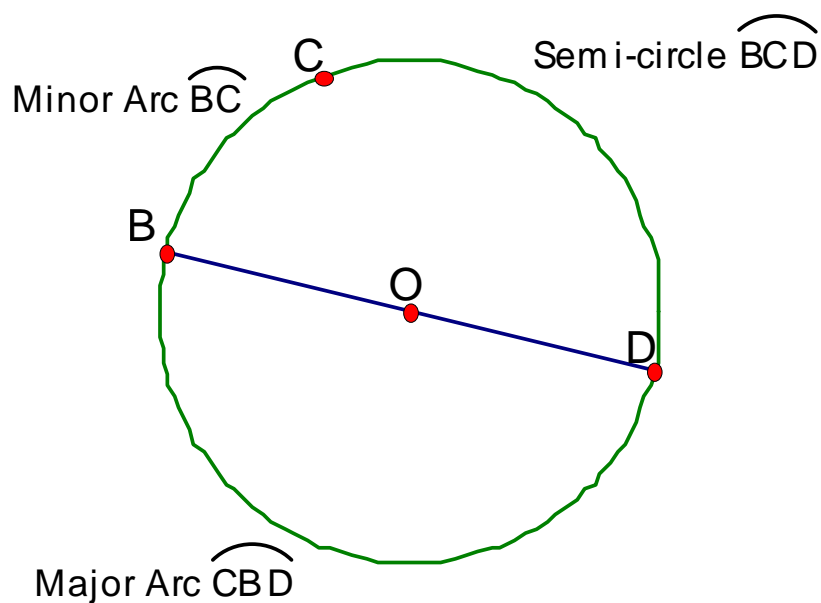
5.1f—Defining Circles

● *Write a good definition for the each of the terms on the following slides.*

● *Be sure to add these definitions to your definitions list in your binders!*

● *As before, examples are on the left, while "non-examples" are on the right.*

● *Remember the characteristics of a good definition.*

● *Work with your classmates to come up with the best possible definition.*

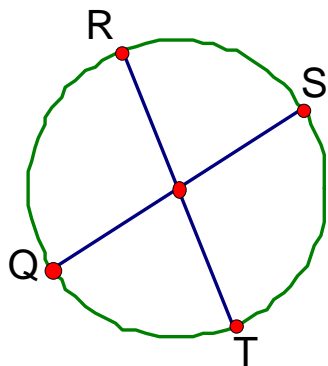# 5.1g—Defining Circles

● *Chord*
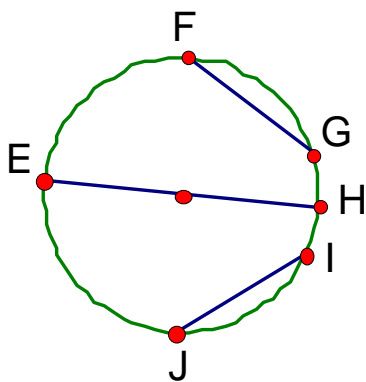
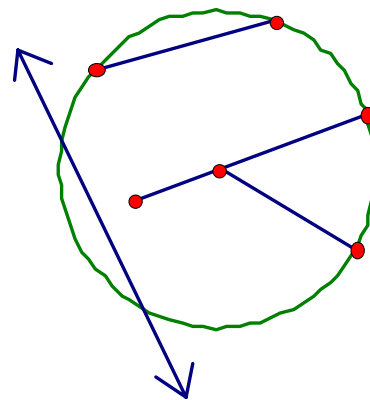$\overline{FG}$, $\overline{EH}$, and $\overline{IJ}$ are chords.
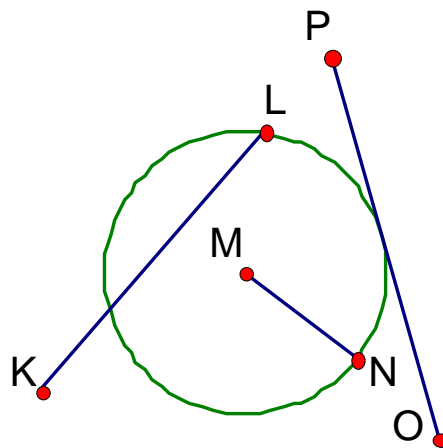
$\overline{KL}$, $\overline{MN}$, and $\overline{OP}$ are NOT chords.

5.1h—Defining Circles
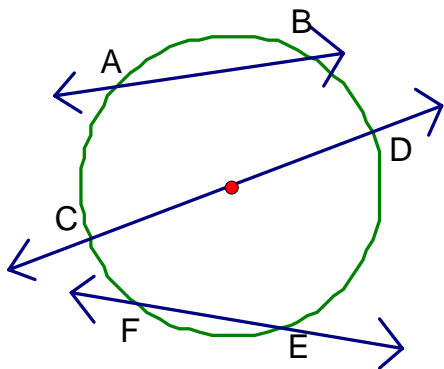
- ## *Diameter*

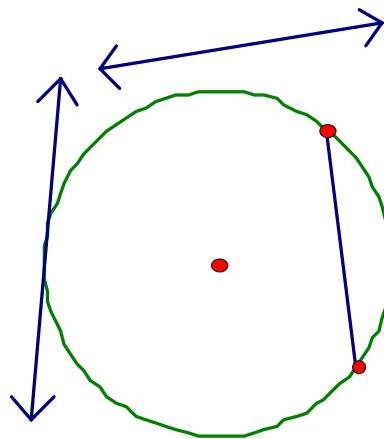$\overline{QS}$ and $\overline{RT}$ are diameters.
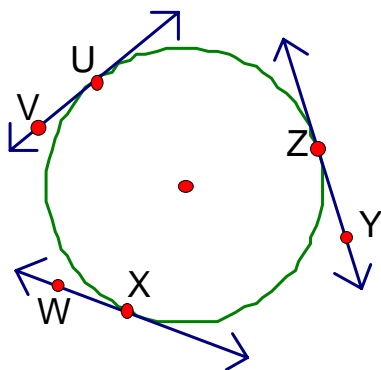
NOT diameters.

5.1i—Defining Circles

● *Secant*

$\overleftrightarrow{AB}$, $\overleftrightarrow{CD}$, and $\overleftrightarrow{EF}$ are secants.
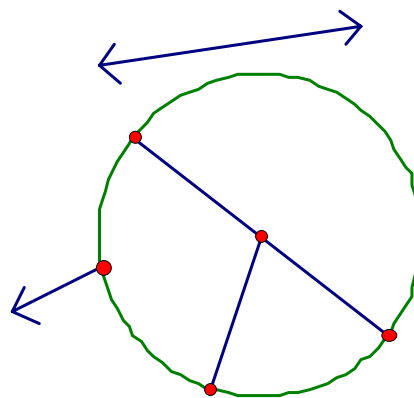
NOT secants.

5.1j—Defining Circles

● *Tangent*

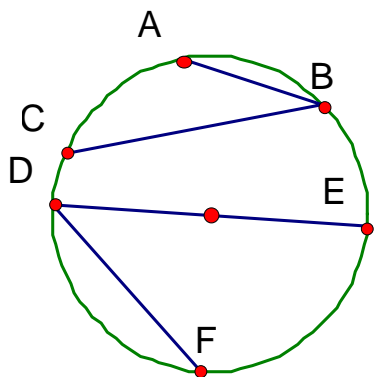$\overleftrightarrow{UV}$, $\overleftrightarrow{WX}$, and $\overleftrightarrow{YZ}$ are tangents.
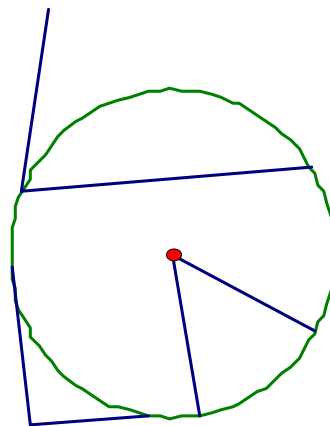
NOT Tangents.

○*Note: Points U, X, and Z are called **points of tangency**.*

5.1k—Defining Circles
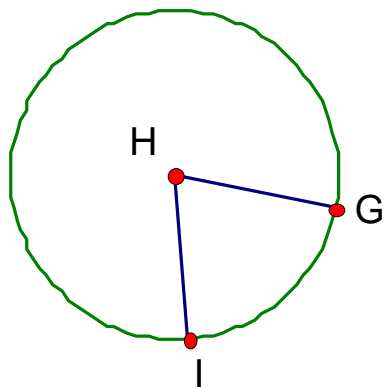
● *Inscribed Angle*

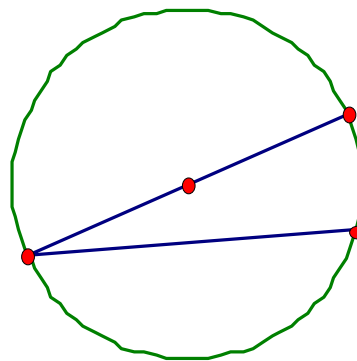∠ABC and ∠EDF are inscribed angles.

NOT inscribed angles.

5.1l—Defining Circles

● *Central Angle*

∠GHI is a central angle.

NOT a central angle.