By permission of Johnny Hart and Creators Syndicate, Inc.

A **circle** is the set of all **points** in a plane at a ∧ **equal distance**
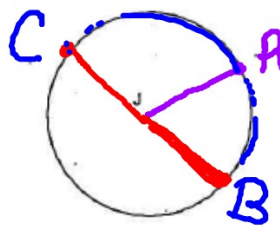from a **point** in the plane.

You name a circle by its **center**. The circle below is circle ⊙**J**

When you see a point at the center of the circle, you can assume that it
represents the center point.

Semicircle: ⌢CAB
⌢BAC

Major Arc:

⌢ACB
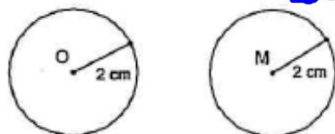⌢BCA

C · ·J · A · B

A segment from the center to a point on the edge of the circle is called the
radius.
The **diameter** is a line segment containing the center, with its
endpoints on the circle.

If two or more circles have the **Same radius** they are congruent circles.

O · 2 cm

M · 2 cm

Congruent Circles

An arc of a circle is ___**2**___ points on the circle and the continuous

(unbroken) part of the circle ___**between those 2 points**___

The two points are called endpoints of the arc.

You write arc AB as: ___**AB**___ or ___**BA**___

You classify arcs into three types: **Semicircle**, **minor Arc**

Major Arc.

A semicircle is an arc of a circle whose endpoints are **the endpoints**
of the diameter.

A minor arc is an arc of a circle that is **less than 180°** (**less than**)
(**semi-circle**)

You can name minor arcs with **2 points**

A major arc is an arc of a circle that is **greater than 180°** (**more than**)
(**a semi circle**)

For semicircles and major arcs, you need ___**3**___ points to make clear
which arc you mean-the first and last letters are the endpoints and the middle
letter is any other point on the arc.

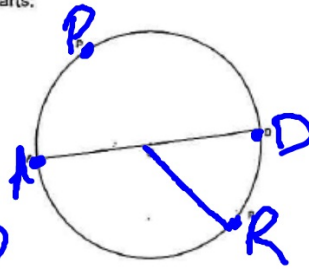Use the following circle to name the following parts:

Name two minor arcs: _____AP_____

_____DR_____

Name two semi circles: _____APD_____

(3pts)

Name two major arcs: _DAP__DRA____ A

_____PAD_____

[Handwritten labels on circle: P, D, A, R]

Arcs have a degree measure, just as angles do. A full circle has an arc measure

of **360°**, and a semicircle has an arc measure of **180°**.

You find the arc measure by measuring the **central angle**, the angle with its

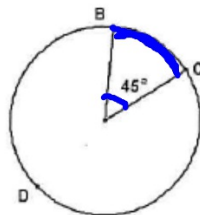**vertex at the center of** _____ and sides

passing through the **endpoints** _____ of the arc. **the circle**

Another definition for a central angle is an angle formed by

~~[scribbled out]~~
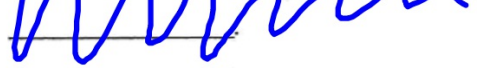
Use the following circle to determine the measures:

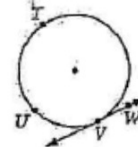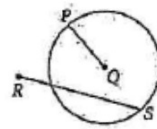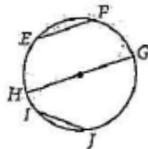What is the measure of arc BC? **45°**
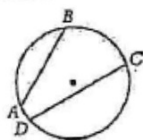
What is the measure of arc BDC? **315°**

[Circle diagram with points B, C, D and 45° central angle]

360
− 45
———
315°

Directions: Write a good definition of each boldfaced term. Discuss your definitions with others in your group. Use the word bank to help you write the definitions.

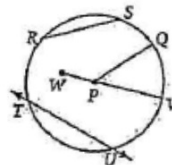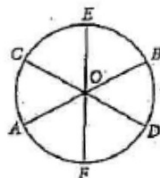| Word bank:	line segment	line	endpoints	circle
	center		intersecting	

Chord

Chords:
$\overline{AB}, \overline{CD}, \overline{EF}, \overline{GH},$ and $\overline{IJ}$

Not chords:
$\overline{PQ}, \overline{RS}, \overline{TU},$ and $\overline{VW}$

A chord is a _line segment whose endpoints are on the circle_

Diameter

Diameters:
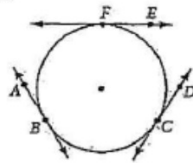$\overline{AB}, \overline{CD},$ and $\overline{EF}$

Not diameters:
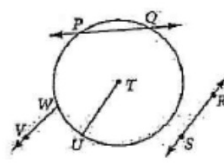$\overline{PQ}, \overline{RS}, \overline{TU},$ and $\overline{VW}$

A Diameter is a _chord that passes through the center. always the longest chord_

Tangent

Tangents:
$\overleftrightarrow{AB}$, $\overleftrightarrow{CD}$, and $\overleftrightarrow{EF}$

Not tangents:
$\overleftrightarrow{PQ}$, $\overleftrightarrow{RS}$, $\overleftrightarrow{TU}$, and $\overleftrightarrow{VW}$

A Tangent is a _Line in the plane of a Circle that intersects the circle in exactly 1 Point_

Inscribed Angle
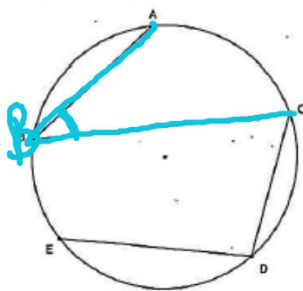
∠ABC, ∠BCD, and ∠CDE are inscribed angles. ∠ABC is inscribed in $\overarc{ABC}$ and intercepts (or determines) $\overarc{AC}$.
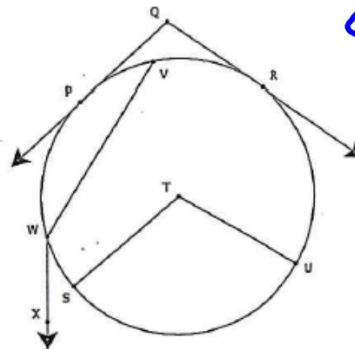
∠PQR, ∠STU, and ∠VWX are not inscribed angles.

An Inscribed Angle is _an angle with a vertex on the circle and side are chords_

Answer the following questions with your group.

a. Can a chord of a circle also be a diameter of the circle? Can it be tangent? Explain why or why not.

a chord can be the diameter as long as it goes thru the center circle

A chord cannot be a tangent because a tangent has 1 point on a cirle and a chord has 2 points

b. Can two circles be tangent to the same line at the same point? Draw a sketch and expl
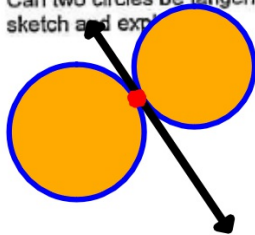
Two circles can be tangent to the same line at the same point.