Name _____

Arcs, Central Angles, and Inscribed Angles

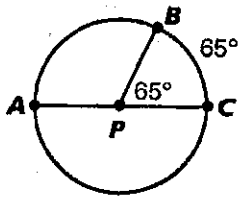
Remember

1. An angle whose vertex is the center of a circle is a **central angle.** Example: $\angle BPC$
2. An **arc** is a curve of a circle. It is named by its endpoints.

   A **minor arc** measures less than 180°. Its measure is equal to the measure of its central angle. Example: $m\overset{\frown}{BC} = m\angle BPC = 65°$

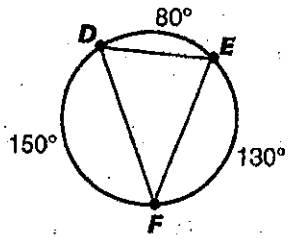
   A **semicircle** measures 180°. Its central angle is a diameter. Example: $m\overset{\frown}{AC} = m\angle APC = 180°$

   A **major arc** measures more than 180°. Its measure is the difference between 360° and the measure of its central angle. Example: $m\overset{\frown}{BAC} = 360° - 65° = 295°$



A whole circle measures 360°.

3. A **chord** is a segment whose endpoints are points on a circle. Example: $\overline{DF}$
   An **inscribed angle** is an angle whose sides are chords and whose vertex is a point on the circle. Example: $\angle DFE$



4. The measure of an inscribed angle is equal to half the measure of its intercepted arc.

   $m\angle DFE = \frac{1}{2}\, m\overset{\frown}{DE} = \frac{1}{2}(80°) = 40°$

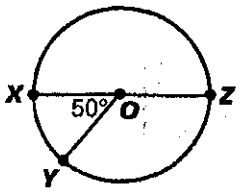
   $m\angle EDF = \frac{1}{2}\, m\overset{\frown}{EF} = \frac{1}{2}(130°) = 65°$

   $m\angle DEF = \frac{1}{2}\, m\overset{\frown}{DF} = \frac{1}{2}(150°) = 75°$

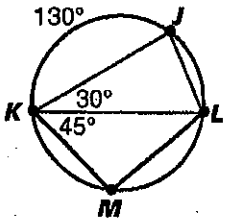
Note: The sum of the angles of $\triangle DEF$ = 180°.

Draw lines to match each arc or angle to its measure. Solve for the missing measures.

1.	$m\overset{\frown}{XY}$ •	•	180°
2.	$m\angle XOZ$ •	•	____
3.	$m\angle YOZ$ •	•	50°
4.	$m\overset{\frown}{XZY}$ •	•	230°
5.	$m\overset{\frown}{YXZ}$ •	•	130°

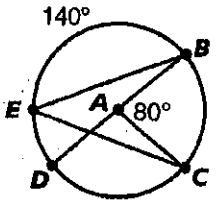


O is the center point.
$\overline{XZ}$ is a diameter.



6.	$m\overset{\frown}{JL}$ •	•	____
7.	$m\angle KLJ$ •	•	95°
8.	$m\angle KJL$ •	•	85°
9.	$m\overset{\frown}{LM}$ •	•	60°
10.	$m\angle KML$ •	•	65°

11.	$m\overset{\frown}{BC}$ •	•	100°
12.	$m\angle BEC$ •	•	80°
13.	$m\overset{\frown}{BEC}$ •	•	40°
14.	$m\overset{\frown}{DC}$ •	•	____
15.	$m\angle EBD$ •	•	280°



***A* is the center point.**
$\overline{DB}$ is a diameter.