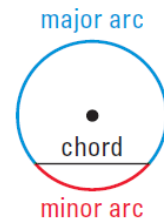# Geometry Notes

Name _____

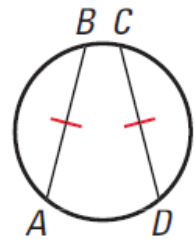# 10.3 Apply Properties of Chords

Recall: A **chord** is a segment with endpoints on a circle.
            Any chord divides the circle into two arcs.

major arc

chord

minor arc

In the same circle, or in congruent circles, two minor arcs are congruent if and only if their corresponding chords are congruent.
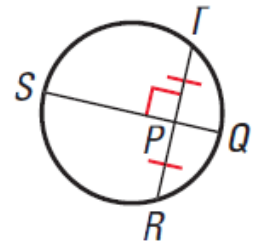
_____ ≅ _____ if and only if _____ ≅ _____

B C

A   D

If one chord is a perpendicular bisector of another chord, then the first chord is a diameter.

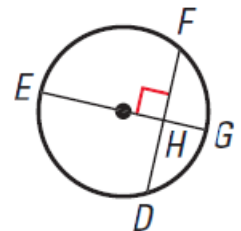If $\overline{QS}$ is a perpendicular bisector of $\overline{TR}$, then

_____

T

S

P   Q

R

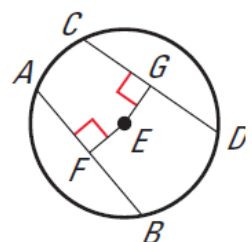If a diameter of a circle is perpendicular to a chord, then it bisects the chord and its arc.

If $\overline{EG}$ is the diameter and $\overline{EG} \perp \overline{DF}$, then

_____ ≅ _____ and _____ ≅ _____

F

E

H G

D

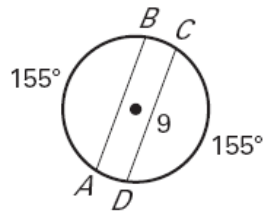
In the same circle, or in congruent circles, two chords are congruent if and only if they are equidistant from the center.

_____ ≅ _____ if and only if _____ ≅ _____
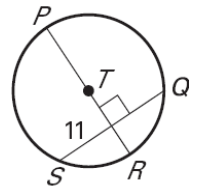
C

A   G

E

D

F

B

Find the length of the given chord.

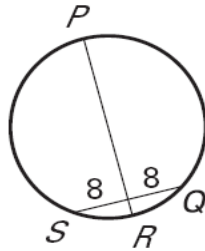| 1. $\overline{AB}$ =	2. $\overline{SQ}$ =

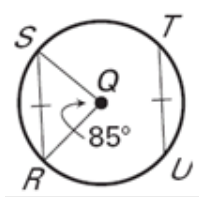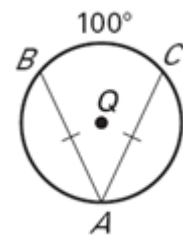Is $\overline{PR}$ a diameter of the circle? Explain.
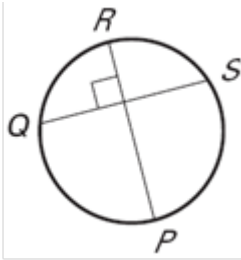
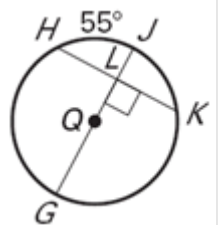| 3.	4a.	4b. If SQ=16 and the diameter of the circle is 20, how far from the center of the circle is SQ?

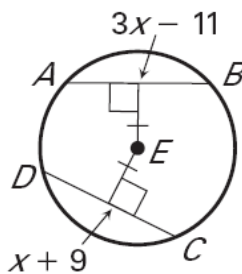Find the missing arc measures.

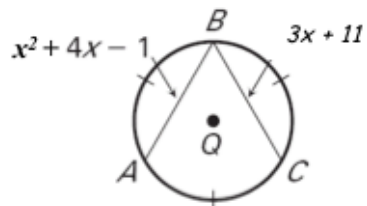| 5. m$\widehat{TU}$	6. m$\widehat{AC}$	7. m $\widehat{HK}$

Find the value of x.

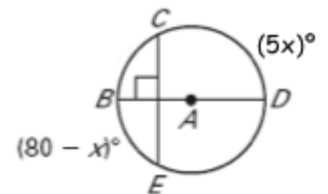| 8.	9.	10.

11. Suppose the radius of a circle is 17 inches and a chord is 30 inches. Find the distance from the center of the circle to the chord. Draw a picture to help!