TOPIC 13-3: ARCS & CHORDS

THEOREM:	In a circle (or congruent circles), 2 minor arcs are congruent if and only if their corresponding chords are congruent.

EXAMPLE 1: Use the figure to answer the questions below.

a) Which two chords are congruent?

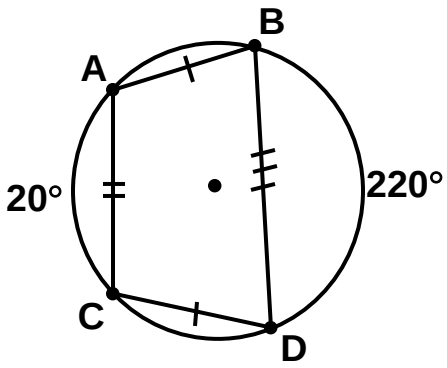
_____

b) Which two arcs are congruent?

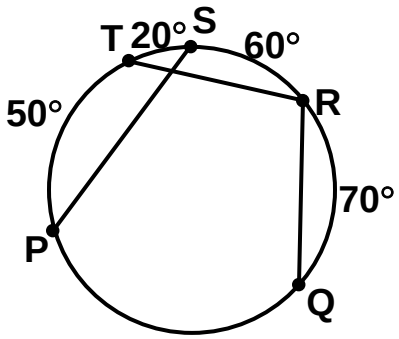
_____

c) What are the measures of their arcs?

_____

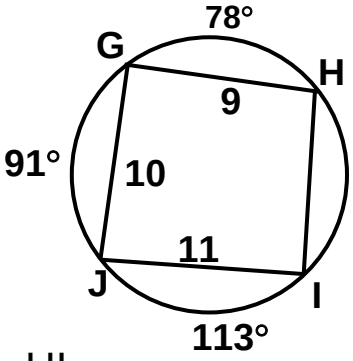


EXAMPLE 2: If PS = 12 and TR = 15, then find QR.



QR = _____

EXAMPLE 3: Find HI.



HI = _____

THEOREM: In a circle, if a diameter (or radius) is perpendicular to a chord, then it bisects the chord and its arc.

EXAMPLE 4: $\overline{AD} \perp \overline{BC}$, AE = 12, and the radius is 13. Find the following.

a) ED = _____

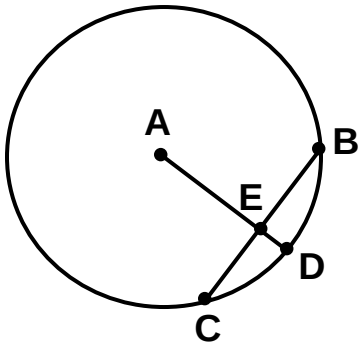
b) AC = _____

c) AB = _____

d) EB = _____

e) EC = _____

f) BC = _____



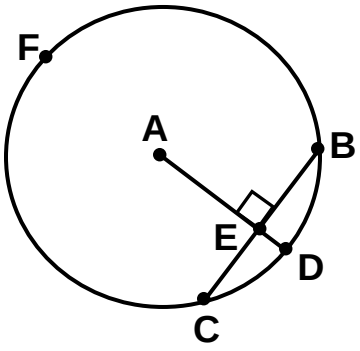
EXAMPLE 5: If the measure of $\overset{\frown}{CFB}$ = 220°, find the following.

a) m $\overset{\frown}{CB}$ = _____

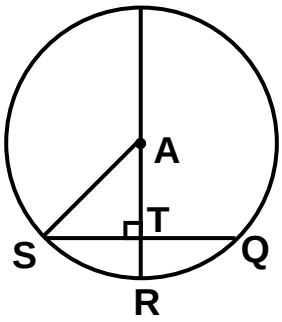
b) m∠CAB = _____

c) m∠BAD = _____

d) m $\overset{\frown}{CD}$ = _____



EXAMPLE 6: In circle A, SQ = 12 and AT = 8. Find TR.



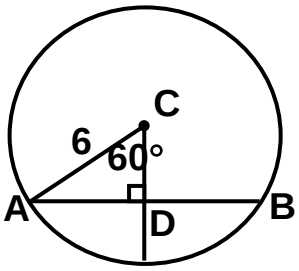
TR = _____

EXAMPLE 7: Using the diagram below, find the indicated values.

a) AD = _____

b) CD = _____

c) m $\overset{\frown}{AB}$ = _____

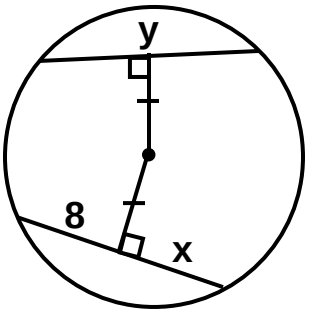


THEOREM: In a circle (or congruent circles), two chords are congruent if and only if they are equidistant from the center.

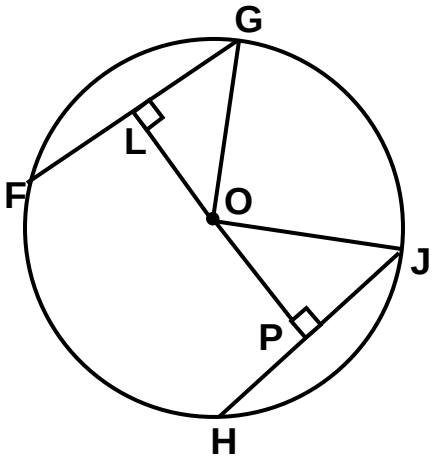
EXAMPLE 8: Find the values of 'x' and 'y'.

x = _____

y = _____



EXAMPLE 9: In circle O, FL = 3, GO = 5, and OP = 4. Find HJ.



HJ = _____