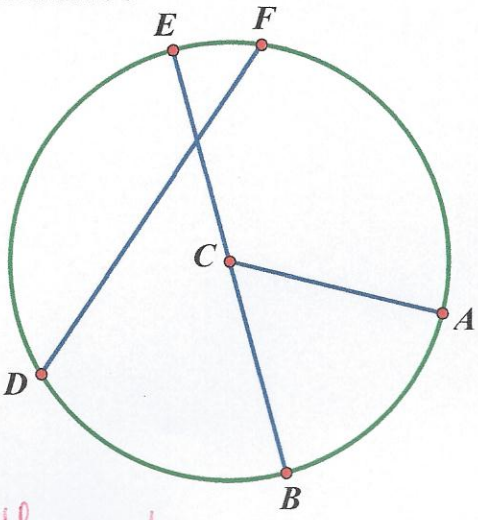
Section 10.1 Circles and Circumference

Definitions:



Circle: A locus of all points in a plane equidistant from a given point, called the center of the circle.

Center: Circles are typically named by ⊙C its center point.

Radius: $\overline{CE}, \overline{CB}, \overline{CA}$
Any segment w/ endpts that are the center & a point on the circle.

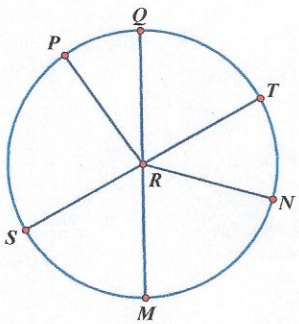
Chord: $\overline{DF}, \overline{EB}$
Any segment w/ endpts that are on the circle.

Diameter: $\overline{EB}$
A chord that passes through the center of the circle.

Circumference: the distance around the circle
- Most often represented by a C

- Are all radii congruent? Yes! By def'n of a ⊙, the distance from the center to any pt. on the ⊙ is always the same.
- What does this tell us about diameters?
  A diameter is composed of 2 radii, so all diameters are ≅.
- Formula for:
  - Diameter (d) = $2r$
  - Radius (r) = $d/2$

Examples:



a. If ST = 18, find RS.

b. If RN = 2, find RP.

c. If RT = 24, find QM.

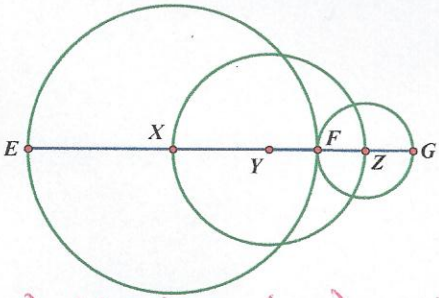
a) $18 = 2r$
$r = 9$
RS = 9

b) RN = RP
so RP = 2

c) QM = 2(24)
QM = 48

Find Measures in Intersecting Circles

The segment connecting the centers of the two intersecting circles contains a radius of each circle.



The diameters of ⊙X, ⊙Y, ⊙Z are 22 mm, 16 mm, and 10 mm respectively.

a. Find EZ

b. Find YF

a) d(⊙X) + r(⊙Z)
22 + 5
EZ = 27 mm

b) r(⊙Y) − r(⊙Z)
8 − 5
YF = 3 mm