

Circles – Similar Circles

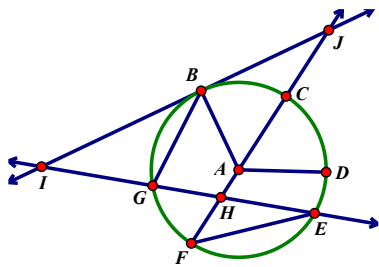
G.C.A.2

Hw Section 12.2

Name _____

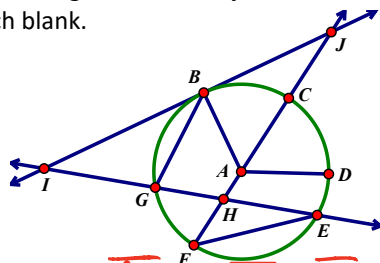
Match the following for Circle A (use each item once).

- #1) \overline{CEG} Major Arc
- #2) \overline{FC} Diameter
- #3) \overline{EG} Chord
- #4) \overline{FD} Minor Arc
- #5) \overleftrightarrow{IJ} Tangent line
- #6) H Interior Point
- #7) \overline{GE} Secant line
- #8) I Exterior Point
- #9) A Center
- #10) \overline{CBF} Semi-Circle



- ~~\overline{EG} Point H~~
- ~~\overline{GE} Point A~~
- ~~\overline{FD} Point I~~
- ~~\overline{FC} \overline{CBF}~~
- ~~\overline{CEG} \overline{IJ}~~

Using the diagram, name objects that meet the description. Fill each blank.



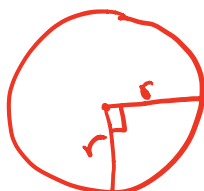
- #11) Chords \overline{BG} , \overline{FE} , \overline{FC} , \overline{GE}
- #12) Radii \overline{AF} , \overline{AD} , \overline{AB} , \overline{AC}
- #13) Central \angle $\angle BAD$, $\angle BAF$, $\angle DAF$
- #14) Exterior Points I , J

#15) Jeff was a little confused by the lesson about the circle basics. When he looked back at his notes he had written down that radii and diameters of circles are not chords. Is this correct? Explain.

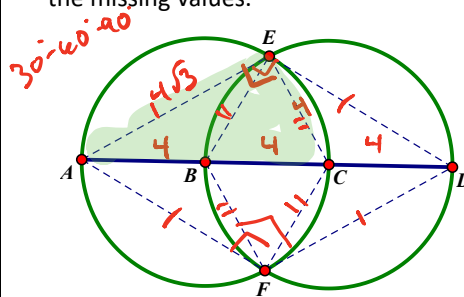
He is wrong. Radii are not chords, but diameters are chords.

#16) A textbook had the following true and false question. "Two radii always form a diameter. T or F The answer is false."

Draw a counter example to this statement to establish it is false.



Circles B and C are congruent. Circle B has a radius of 4 cm and $\angle AEC$ is a right angle. Use this information to determine the missing values.



#17) $BC = 4$ #18) $AD = 12$

#19) $AC = 8$ #20) Perimeter of Quad. BECF 16

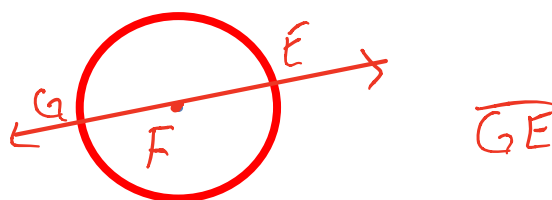
#21) $AE = 4\sqrt{3}$ #22) Perimeter of $\triangle BED$ $12 + 4\sqrt{3}$

#23) After completing the previous questions a very observant student states, "Hey $\triangle AEC$ must be a special right triangle, $30^\circ - 60^\circ - 90^\circ$." She is correct, what did she see that helped her come to this conclusion?

Maybe that AC was twice the size of EC in $\triangle AEC$.

Secant \overline{GE} goes through Circle F's center and intersects at points G and E.

#24) Draw the description. What is the name of the diameter formed by the secant?



#25) Name the two radii formed by the secant.

\overline{FG} , \overline{FE}

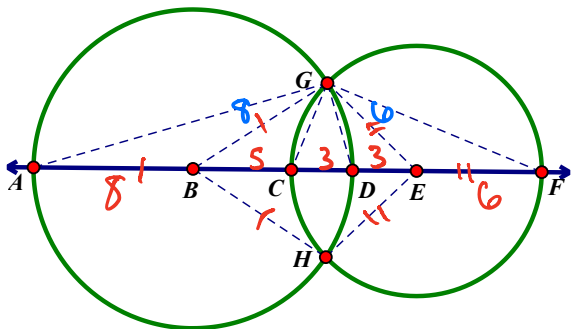
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Circles B and E have radii of 8 cm & 6 cm respectively, and CD is 3 cm. Use this information to determine the missing values.



#26) $BC = 5$

#27) $EA = 19$

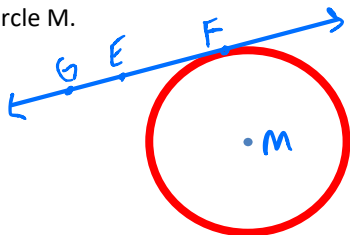
#28) Perimeter of BGEH = $28 = 8 + 8 + 6 + 6$

#29) $AF = 25$

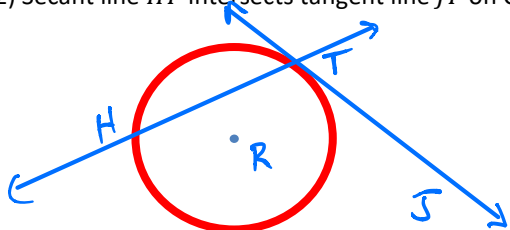
#30) Perimeter of $\triangle BGE = 25 = 6 + 8 + 11$

Draw the following relationships.

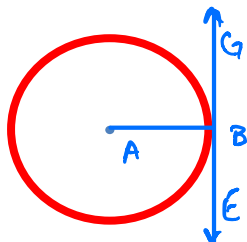
#31) Tangent line \overline{GE} has a point of tangency at Point F on Circle M.



#32) Secant line \overline{HT} intersects tangent line \overline{JT} on Circle R.



#33) Radius \overline{AB} intersects tangent line \overline{GE} on circle A.



Determine the radius of the circle.

#34) Area = 36π

#35) $C = 36\pi$

$$\begin{aligned} A_c &= \pi r^2 \\ 36\pi &= \pi r^2 \\ 36 &= r^2 \\ \pm 6 &= r \\ r &= 6 \end{aligned}$$

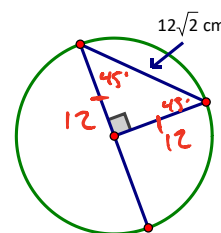
$$\begin{aligned} C &= 2\pi r \\ 36\pi &= 2\pi r \\ 18 &= r \end{aligned}$$

#36) $d = 7$ cm

$$\begin{aligned} d &= 2r \\ 7 &= 2r \end{aligned}$$

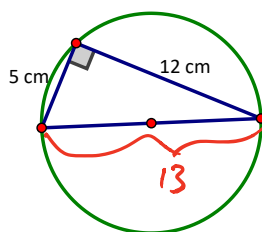
$$r = 7/2 \text{ cm}$$

#37)



$$r = 12 \text{ cm}$$

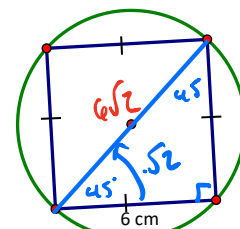
#38)



Pythagorean Triple
 $5-12-13$

$$r = 13/2$$

#39)



$$\begin{aligned} r &= \frac{1}{2}d \\ r &= \frac{1}{2}(6\sqrt{2}) \\ r &= 3\sqrt{2} \text{ cm} \end{aligned}$$