

4-9A The Bigger Circle Puzzle

You are given the following information:

$$\begin{aligned} \overleftrightarrow{GF} &\text{ is tangent to Circle O at D.} \\ m\widehat{DE} &= 122 \quad m\widehat{AC} = 20 \quad m\widehat{DC} = 90 \end{aligned}$$

Label the circle on the accompanying worksheet with the given information, then find the measure of each angle and arc below. Write the measure of each angle and arc as you find it on the circle, and use tick marks to designate congruent angles. Check your work as you proceed. Do not make any assumptions. Record your answers below.

- | | | |
|-----------------------------|---------------------------|----------------------------|
| 1. $m\angle EDF =$ _____ | 2. $m\angle DOE =$ _____ | 3. $m\angle OED =$ _____ |
| 4. $m\angle ODE =$ _____ | 5. $m\angle BDG =$ _____ | 6. $m\angle BCD =$ _____ |
| 7. $m\angle ADC =$ _____ | 8. $m\angle CDG =$ _____ | 9. $m\widehat{AB} =$ _____ |
| 10. $m\widehat{BE} =$ _____ | 11. $m\angle ADB =$ _____ | 12. $m\angle DAE =$ _____ |
| 13. $m\angle AED =$ _____ | 14. $m\angle BOE =$ _____ | 15. $m\angle BDF =$ _____ |
| 16. $m\angle CDB =$ _____ | 17. $m\angle AIB =$ _____ | 18. $m\angle CHD =$ _____ |
| 19. $m\angle DHB =$ _____ | 20. $m\angle AIC =$ _____ | 21. $m\angle BIJ =$ _____ |
| 22. $m\angle AJB =$ _____ | 23. $m\angle EJD =$ _____ | 24. $m\angle AJD =$ _____ |
| 25. $m\angle JEO =$ _____ | | |

4-9B The Bigger Circle Puzzle

Using the given information and your knowledge of circles, record the measures of the angles and arcs on the circle below.

