

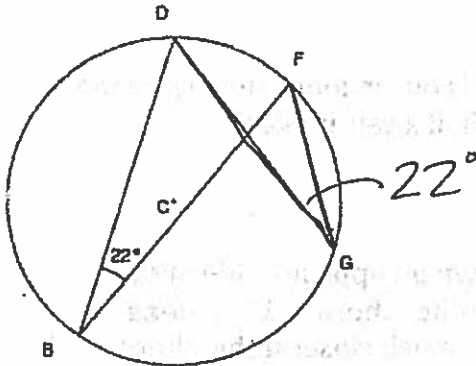
Grade 9 Math
Unit 8: Circle Geometry

June Exam Review

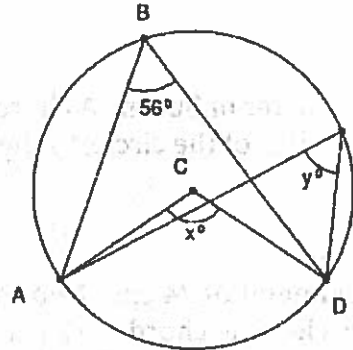
- 1A). Describe the Tangent-Radius Property.
C). Describe the Central Angle Property.

- B). Describe the Perpendicular Chord Property.
D). Describe the Inscribed Angle Property.

2. What is the measure of $\angle DGF$?



3. What are the measures of x and y ?



$$x = 2 \times 56$$

$$= 112^\circ$$

$$y = 56^\circ$$

4. (i) What is the value of x ?
(ii) What is the measure of $\angle ABE$?

$$6x - 14 = 4x + 2$$

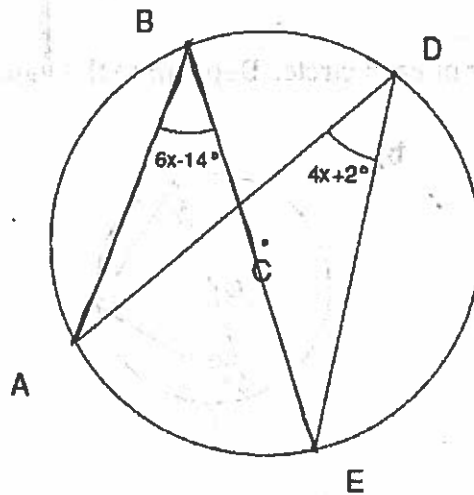
$$\begin{array}{r} -4x \\ -4x \end{array}$$

$$2x - 14 = 2$$

$$\begin{array}{r} +14 \\ +14 \end{array}$$

$$\frac{2x}{2} = \frac{16}{2}$$

$$x = 8$$



$$\angle ABE = 6x - 14$$

$$= 6(8) - 14$$

$$= 48 - 14$$

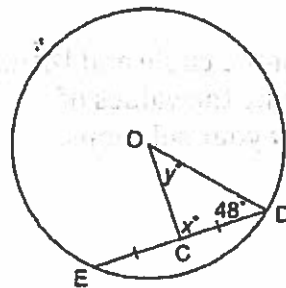
$$= 34^\circ$$

5. Point O is the center of the circle. Determine the values of x° and y° .

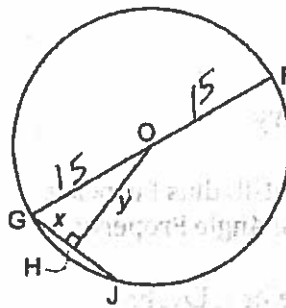
$$x = 90^\circ$$

$$y = 180 - 90 - 48$$

$$= 42^\circ$$



6. Point O is the center of the circle.
 OF = 15 cm and GJ = 11 cm.
 Determine the values of x and y
 to the nearest tenth of a centimeter
 where necessary.



$$x = \frac{11}{2} = 5.5 \text{ cm}$$

$$a^2 + b^2 = c^2$$

$$5.5^2 + y^2 = 15^2$$

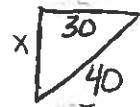
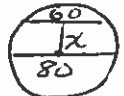
$$30.25 + y^2 = 225$$

$$y^2 = 225 - 30.25 = 194.75$$

$$y^2 = 194.75$$

$$y = 14 \text{ cm}$$

7. A circle has a diameter of 80 cm. A chord in the circle is 60 cm long. How far is the chord from the center of the circle, to the nearest tenth of a centimeter?



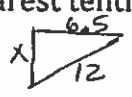
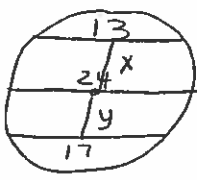
$$40^2 = 30^2 + x^2$$

$$1600 = 900 + x^2$$

$$x^2 = 1600 - 900 = 700$$

$$x = \sqrt{700} = 26.5 \text{ cm}$$

8. A circle has a diameter of 24 cm. Two chords are drawn on opposite side of the center of the circle. One chord is 17 cm long and the other chord is 13 cm long. Which chord is closer to the center of the circle? How much closer if this chord, to the nearest tenth of a centimeter?



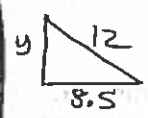
$$12^2 - 6.5^2 = x^2$$

$$144 - 42.25 = x^2$$

$$x^2 = 101.75$$

$$x = \sqrt{101.75}$$

$$x = 10.1 \text{ cm}$$



$$12^2 - 8.5^2 = y^2$$

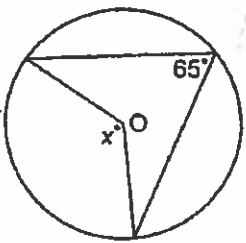
$$144 - 72.25 = y^2 = 71.75$$

$$y = \sqrt{71.75} = 8.5 \text{ cm}$$

17cm chord is closer by 1.6cm

9. Point O is the center of each circle. Determine the values of x° and y° . Justify your solutions.

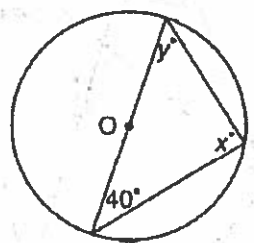
a)



$$x = 2 \times 65$$

$$x = 130^\circ$$

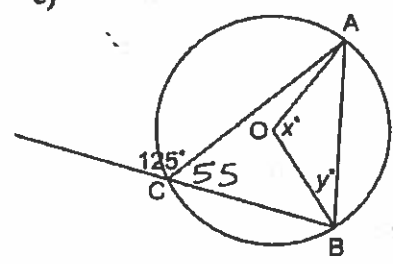
b)



$$x = 90^\circ$$

$$y = 50^\circ$$

c)



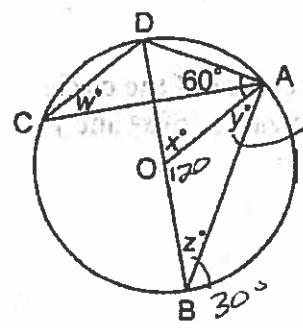
$$x = 2 \times 55$$

$$x = 110^\circ$$

$$y = \frac{180 - 110}{2}$$

$$= \frac{70}{2} = 35$$

10. Point O is the center of the circle and DB is the diameter. Determine the values of w° , x° , y° and z° . Justify your solutions.



$$y = 30^\circ$$

$$z = 30^\circ$$

$$x = 60^\circ$$

$$w = 30^\circ$$