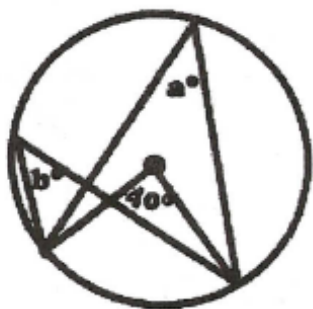


Math 11

Circle Geometry Review #2

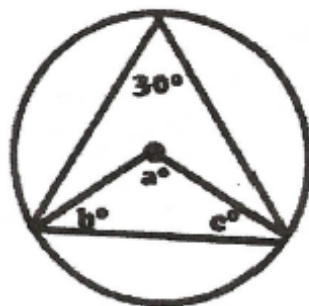
1.



$$a^\circ = \underline{20^\circ}$$

$$b^\circ = \underline{20^\circ}$$

2.

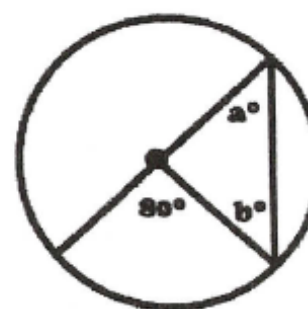


$$a^\circ = \underline{60^\circ}$$

$$b^\circ = \underline{60^\circ}$$

$$c^\circ = \underline{60^\circ}$$

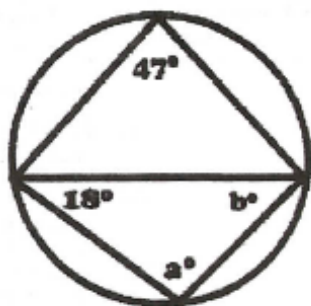
3.



$$a^\circ = \underline{40^\circ}$$

$$b^\circ = \underline{40^\circ}$$

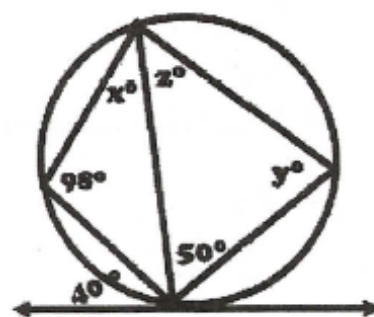
4.



$$a^\circ = \underline{133^\circ}$$

$$b^\circ = \underline{29^\circ}$$

5.

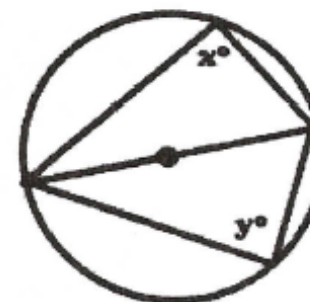


$$x^\circ = \underline{40^\circ}$$

$$y^\circ = \underline{82^\circ}$$

$$z^\circ = \underline{48^\circ}$$

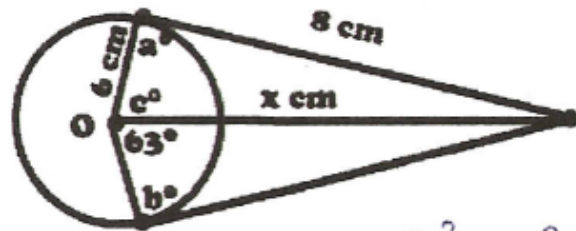
6.



$$x^\circ = \underline{90^\circ}$$

$$y^\circ = \underline{90^\circ}$$

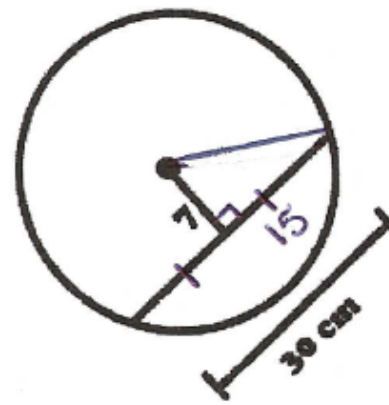
7.



$$\begin{aligned}
 a^\circ &= \underline{90^\circ} \\
 b^\circ &= \underline{90^\circ} \\
 c^\circ &= \underline{63^\circ} \\
 x \text{ cm} &= \underline{10 \text{ cm}}
 \end{aligned}$$

$$\begin{aligned}
 c^2 &= a^2 + b^2 \\
 c^2 &= (6)^2 + (8)^2 \\
 c^2 &= 36 + 64 \\
 c^2 &= 100 \\
 c &= 10
 \end{aligned}$$

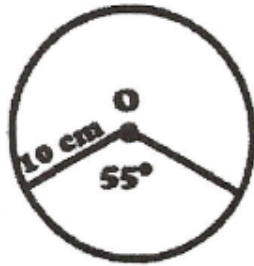
8.



$$\text{Radius} = \underline{16.6} \text{ cm}$$

$$\begin{aligned}
 c^2 &= a^2 + b^2 \\
 c^2 &= (7)^2 + (15)^2 \\
 c^2 &= 49 + 225 \\
 c^2 &= 274 \\
 c &= \sqrt{274} \\
 c &= 16.6
 \end{aligned}$$

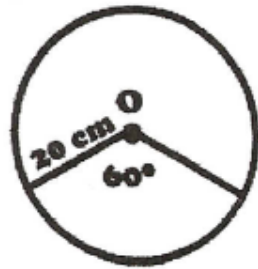
9. Find the ARC LENGTH.



$$\begin{aligned}
 C &= 2\pi r \\
 &= 2\pi(10) \\
 &= 62.8 \text{ cm}
 \end{aligned}
 \qquad
 \begin{aligned}
 \frac{\text{h of A}}{C} &= \frac{\text{Angle}}{360^\circ} \\
 \frac{\text{h of A}}{62.8} &= \frac{55^\circ}{360^\circ}
 \end{aligned}$$

$$\begin{aligned}
 \frac{(\text{h of A})(360^\circ)}{360^\circ} &= \frac{(62.8)(55^\circ)}{360^\circ} \\
 \text{h of A} &= 9.6 \text{ cm}
 \end{aligned}$$

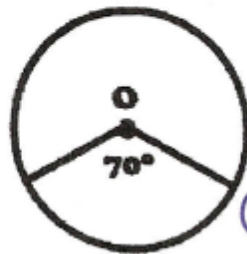
10. Find the SECTOR AREA



$$\begin{aligned}
 A &= \pi r^2 \\
 &= \pi(20)^2 \\
 &= \pi(400) \\
 &= 1256.6 \text{ cm}^2
 \end{aligned}
 \qquad
 \begin{aligned}
 \frac{\text{SA}}{A \text{ of C}} &= \frac{\text{Angle}}{360^\circ} \\
 \frac{\text{SA}}{1256.6 \text{ cm}^2} &= \frac{60^\circ}{360^\circ}
 \end{aligned}$$

$$\begin{aligned}
 \frac{(\text{SA})(360^\circ)}{360^\circ} &= \frac{(1256.6)(60^\circ)}{360^\circ} \\
 \text{SA} &= 209.5 \text{ cm}^2
 \end{aligned}$$

11. Find the RADIUS if the SECTOR AREA is 50 cm^2



$$\frac{SA}{A_{ofC}} = \frac{\text{Angle}}{360^\circ}$$

$$\frac{50}{A_{ofC}} = \frac{70^\circ}{360^\circ}$$

$$\frac{(50)(360^\circ)}{70^\circ} = \frac{(A_{ofC})(70^\circ)}{70^\circ}$$

$$257.1 \text{ cm}^2 = A_{ofC}$$

$$A = \pi r^2$$

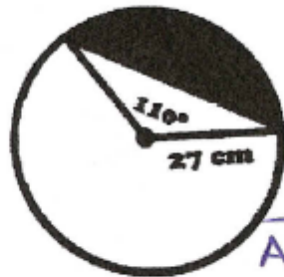
$$\frac{257.1}{\pi} = \frac{\pi r^2}{\pi}$$

$$81.9 = r^2$$

$$\sqrt{81.9} = r$$

$$9.05 \text{ cm} = r$$

12. Find the area of the shaded SEGMENT.



$$\textcircled{1} A = \pi r^2$$

$$= \pi (27)^2$$

$$= \pi (729)$$

$$= 2290.22 \text{ cm}^2$$

$$\frac{SA}{A_{ofC}} = \frac{\text{Angle}}{360^\circ}$$

$$\frac{SA}{2290.22} = \frac{110^\circ}{360^\circ}$$

$$\frac{(SA)(360^\circ)}{360^\circ} = \frac{(2290.22)(110^\circ)}{360^\circ}$$

$$A_{\text{sector}} = 699.79 \text{ cm}^2$$

$$\textcircled{2} A_{\text{triangle}} = \frac{1}{2} r^2 \sin \theta$$

$$= \frac{1}{2} (27)^2 \sin 110^\circ$$

$$= \frac{1}{2} (729) (0.9397)$$

$$= \frac{1}{2} (685.04)$$

$$= 342.52 \text{ cm}^2$$

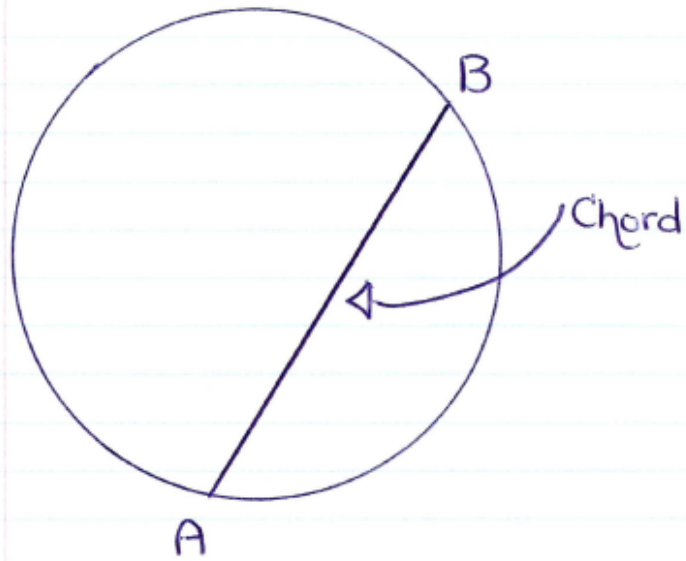
$$\textcircled{3} A_{\text{segment}} = A_{\text{sector}} - A_{\Delta}$$

$$= 699.79 - 342.52$$

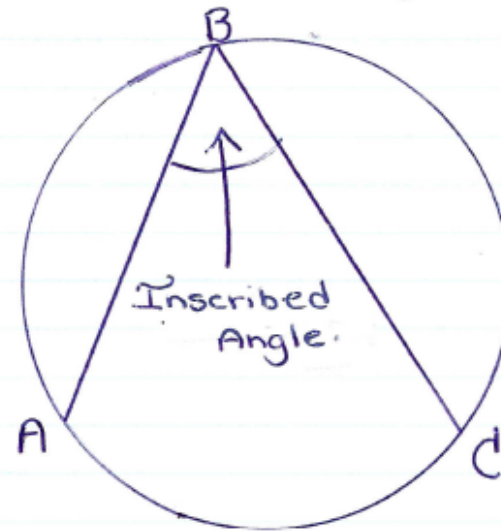
$$= 357.27 \text{ cm}^2$$

13.

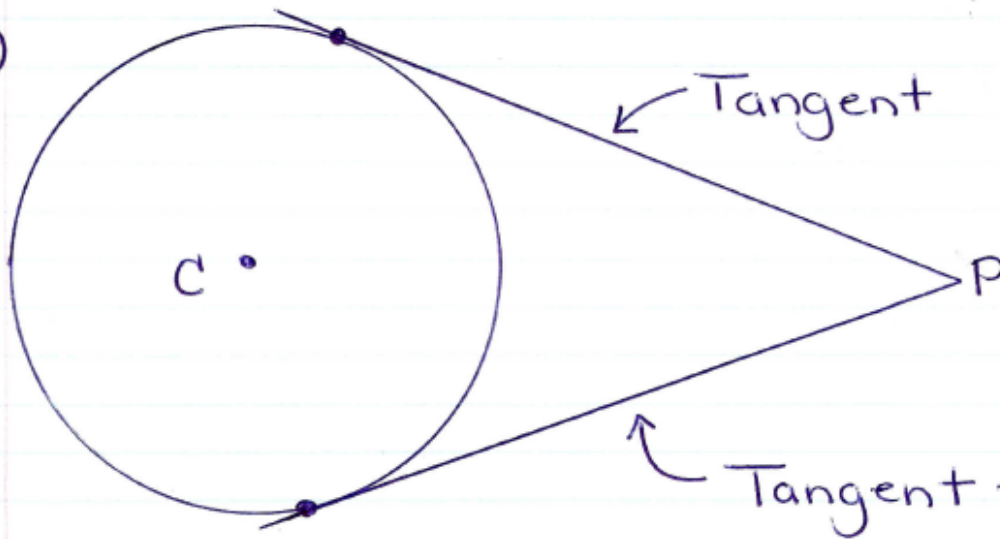
a) CHORD



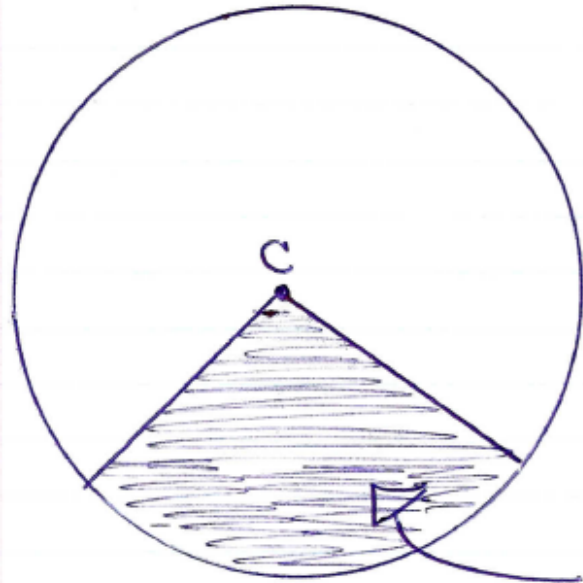
b) INSCRIBED ANGLE



c)

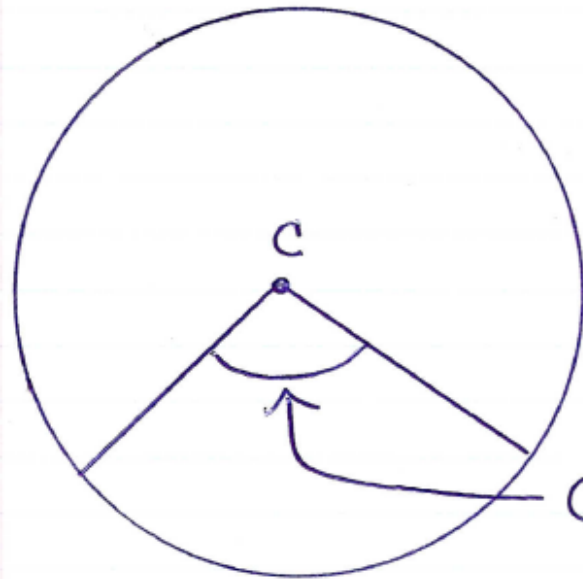


d)



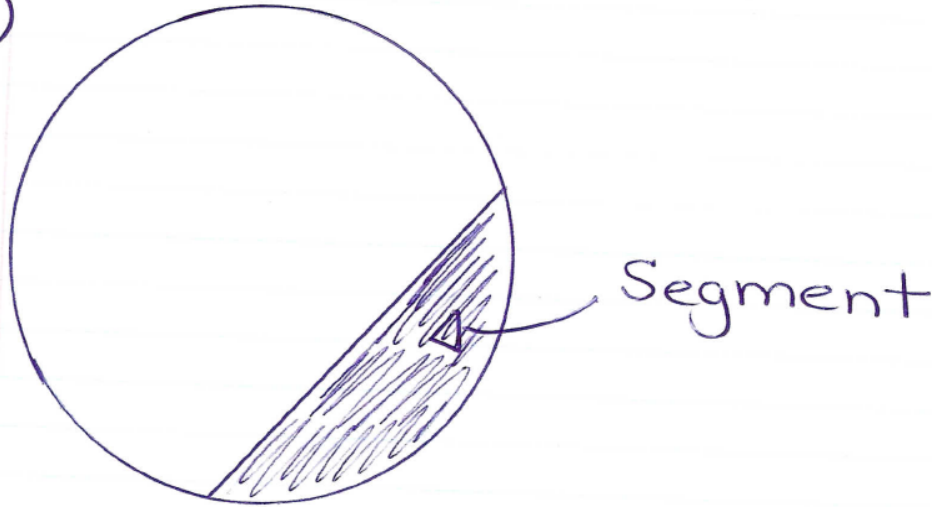
Sector

e)

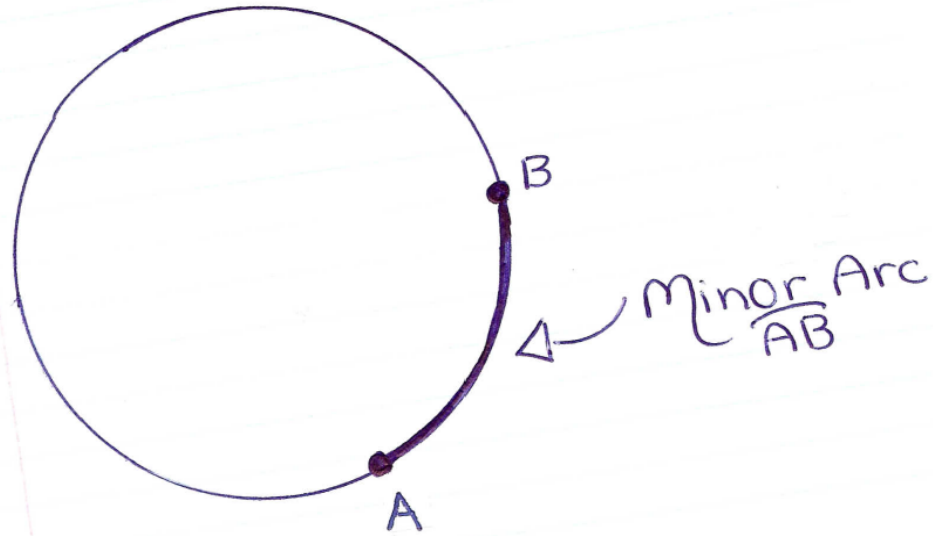


Central Angle

f)



g)





MATH 111

14. Step 1

$$\begin{aligned}d^2 &= a^2 + b^2 \\d^2 &= (10)^2 + (6)^2 \\d^2 &= 100 + 36 \\d^2 &= 136 \\d &= \sqrt{136} \\d &= 11.66 \\"s" &= 11.66.\end{aligned}$$

Step 2

$$\begin{aligned}C &= 2\pi r \\&= 2\pi(6) \\&= \pi(12) \\&= 37.70\end{aligned}$$

Step 3

$$\begin{aligned}\text{Lateral Area} &= \frac{1}{2}Cs \\&= \frac{1}{2}(37.70)(11.66) \\&= \frac{1}{2}(439.58) \\&= 219.79\end{aligned}$$

Step 4

$$\begin{aligned}A &= \pi r^2 \\&= \pi(6)^2 \\&= \pi(36) \\&= 113.10\end{aligned}$$

Step 5

$$\begin{aligned}\text{Total Area of Cone} \\&\rightarrow \text{Lateral Area} + \text{Base Area} \\&= 219.79 + 113.10 \\&= 332.89.\end{aligned}$$