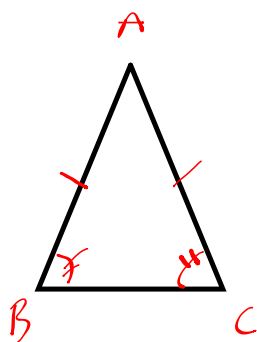
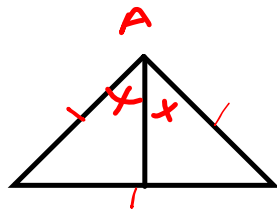
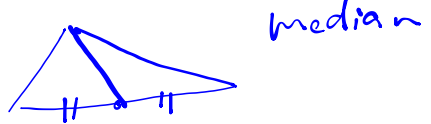
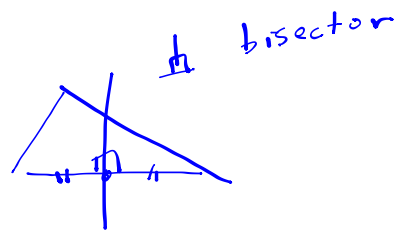
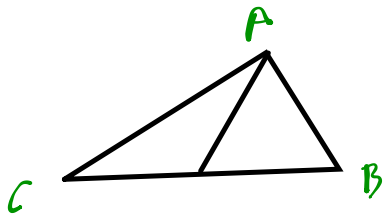
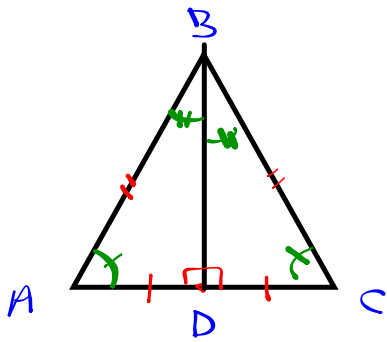
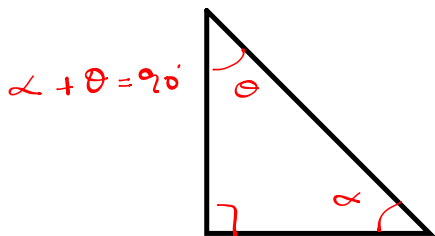


Unit 7: Triangles and Their Theorems

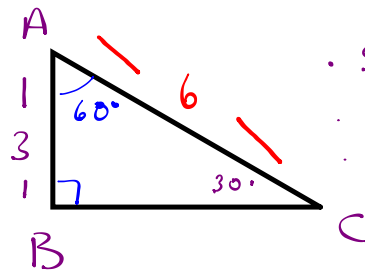


Th 9





Th 14

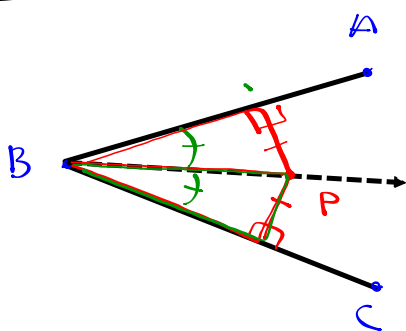


Th 15 - Th 20
(come back)

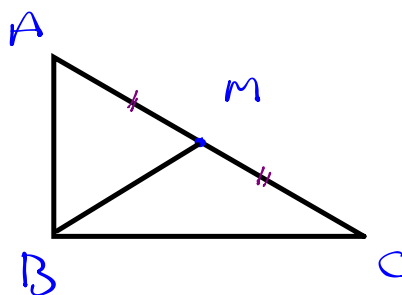
Th 21 - 23

- SOH CAH TOA
- sine law
- cosine law

Th 41



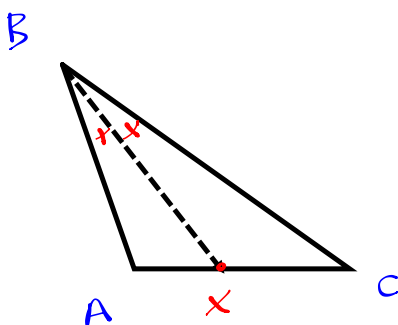
Th 42



$$m \overline{BM} = \overline{AM} = \overline{MC} = \frac{1}{2} \overline{AC}$$

Th 80

$$\frac{\overline{AX}}{\overline{AB}} = \frac{\overline{XC}}{\overline{BC}}$$



$$\frac{\overline{AX}}{\overline{XC}} = \frac{\overline{AB}}{\overline{BC}}$$

Right Triangles: Th 89 - 91

Th 89

$$\overline{AB} = \sqrt{\overline{AP} \times \overline{AC}}$$

$$\overline{AB}^2 = \overline{AP} \times \overline{AC}$$

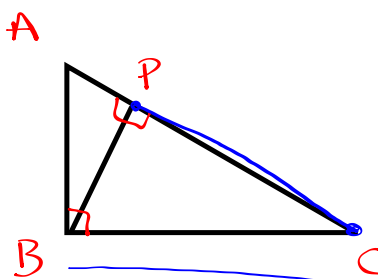
$$\overline{BC} = \sqrt{\overline{PC} \times \overline{AC}}$$

$$\overline{BC}^2 = \overline{PC} \times \overline{AC}$$

Th 90

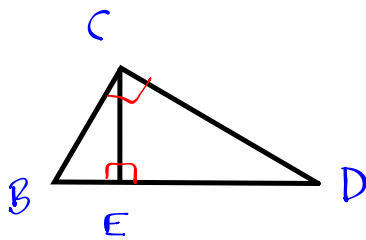
$$\overline{BP} = \sqrt{\overline{AP} \times \overline{PC}}$$

$$\overline{BP}^2 = \overline{AP} \times \overline{PC}$$

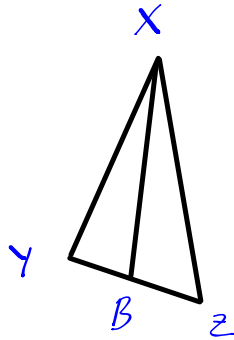


Th 91

$$\overline{AC} \times \overline{BP} = \overline{AB} \times \overline{BC}$$

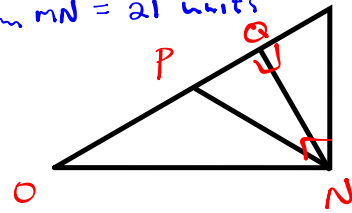


$\overline{CE} = 8$ units
 $\overline{CD} = 18$ units
 Find \overline{BC}

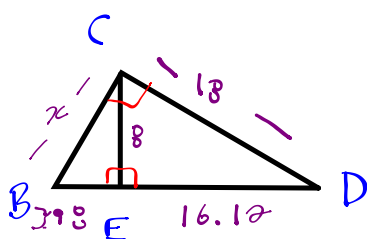


$m\angle YXB = m\angle BXZ$
 $m\overline{XY} = 45.3$
 $m\overline{BY} = 22.6$
 $m\overline{YZ} = 49.1$
 find $m\overline{XZ}$

$m\overline{OP} = m\overline{PM}$ P 7.7
 $m\overline{NP} = 30$ units
 $m\overline{MN} = 21$ units



find \overline{PQ}



$\overline{CE} = 8$ units
 $\overline{CD} = 18$ units
 Find \overline{BC}

Th 12

$$ED = \sqrt{18^2 - 8^2}$$

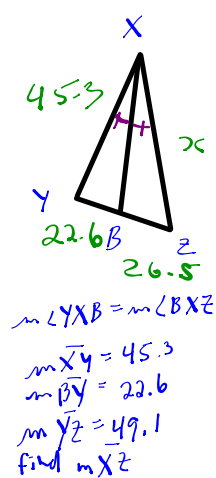
$$ED = 16.12 \text{ units.}$$

Th 90

$$\overline{BC}^2 = \frac{16.12 \cdot BE}{16.12}$$

$$\overline{BE} = 3.98 \text{ units}$$

Th 12 to find x .



\overline{XB} - bisector

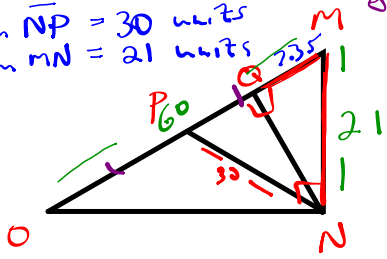
Th 80

$$26.5 \frac{45.3}{22.6} = \left(\frac{x}{26.5} \right) 26.5$$

$$x = 53.1 \text{ units}$$

$$\frac{2 \cdot 22.6}{45.3} = \frac{26.5}{x}$$

$\overline{OP} = \overline{PM}$ P 7.7
 $\overline{NP} = 30$ units
 $\overline{MN} = 21$ units



find \overline{PQ}

NP - median

Th 42

$$\overline{OM} = 60 \text{ units}$$

Th 89

$$\overline{MN}^2 = \overline{MQ} \times \overline{MO}$$

$$21^2 = \overline{MQ} \cdot 60$$

$$\overline{MQ} = 7.35 \text{ units}$$

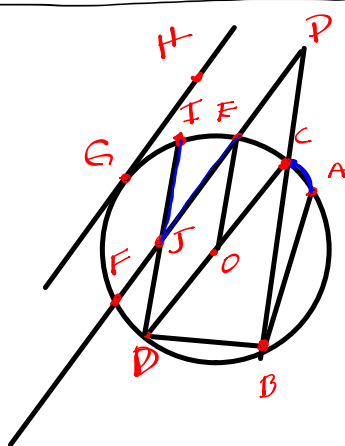
$$\overline{PQ} = \overline{PM} - \overline{QM}$$

$$\overline{PQ} = 30 - 7.35$$

$$\overline{PQ} = 22.65 \text{ units}$$

Unit 8 : Circles and their theorems

- \widehat{AC} = arc
- \overline{CO} = radius
- \overline{AB} = chord
- \overline{EF} = secant
- O = origin
- GH = tangent
- \overline{CD} = diameter

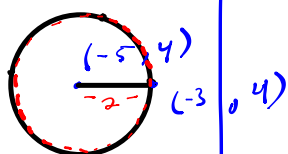


- $\angle BDC$ - inscribed
- $\angle FOC$ - central
- $\angle IJE$ - interior
- $\angle BPD$ - exterior.

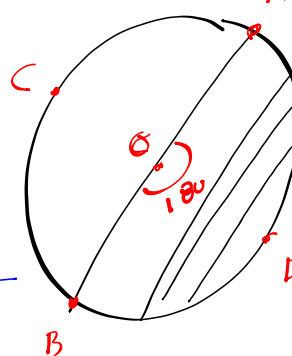
Th 67

$$(x-h)^2 + (y-k)^2 = r^2$$

$$(x+5)^2 + (y-4)^2 = 4$$



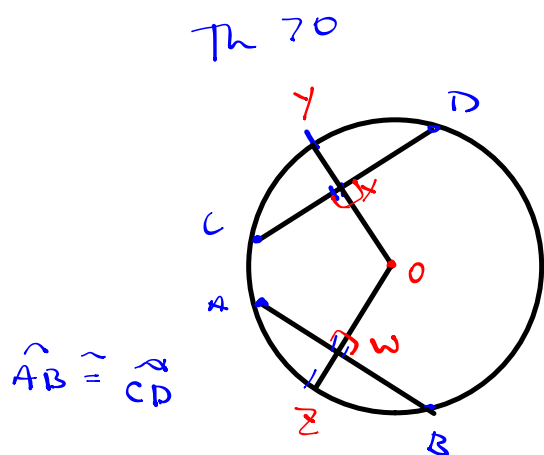
Th 68



Th 69

$$\widehat{AOB} = \widehat{ACB}$$

$$100^\circ = 130^\circ$$

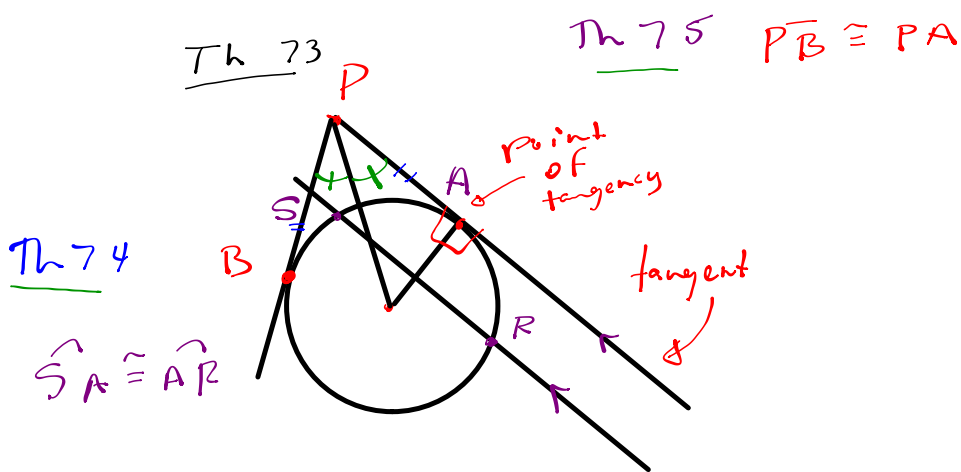


Th 71

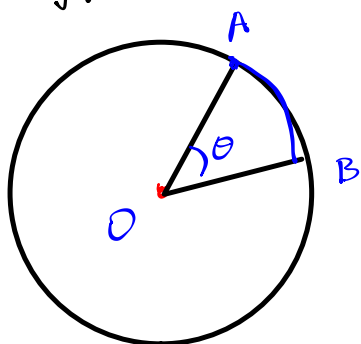
$$\overline{CX} = \overline{XD}$$

$$\widehat{CY} = \widehat{YD}$$

Th 72 $\overline{XO} = \overline{WO}$

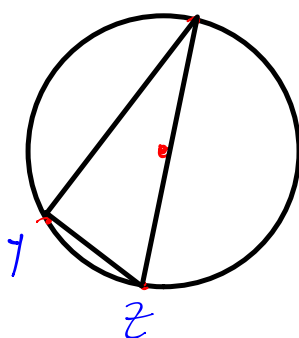


Th 76



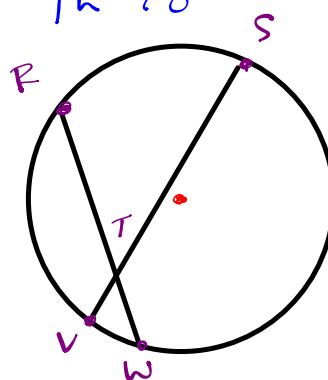
$$m\angle AOB = m\widehat{AB}$$

Th 77



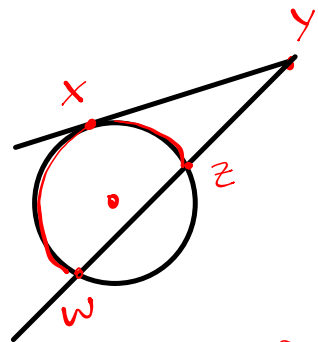
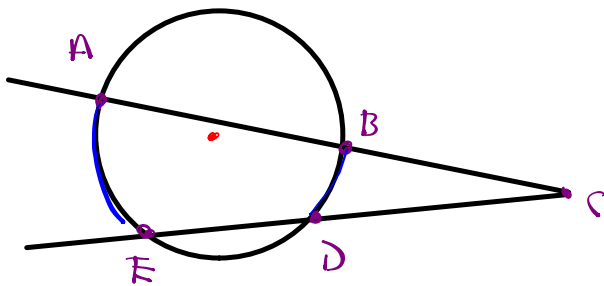
$$\angle y = \frac{1}{2} \widehat{xz}$$

Th 78

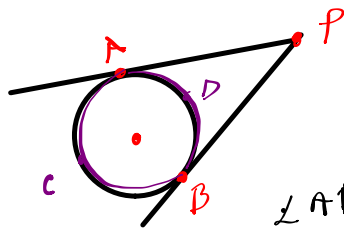


$$\angle RTS = \frac{1}{2} (\widehat{RS} + \widehat{v})$$

Th 79 $\angle ACE = \frac{1}{2}(\widehat{AE} - \widehat{BD})$



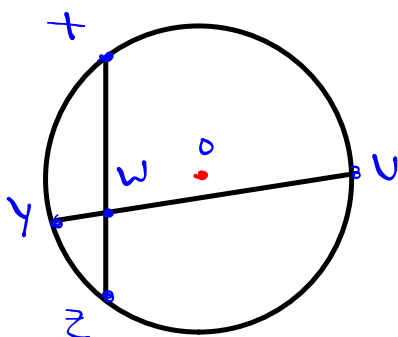
$\angle XYW = \frac{1}{2}(\widehat{XW} - \widehat{XZ})$



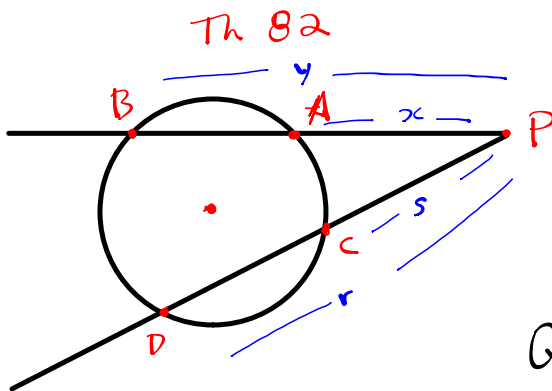
$\angle APB = \frac{1}{2}(\widehat{ACB} - \widehat{APB})$

$\overline{PA} = \overline{PB}$

Th 81

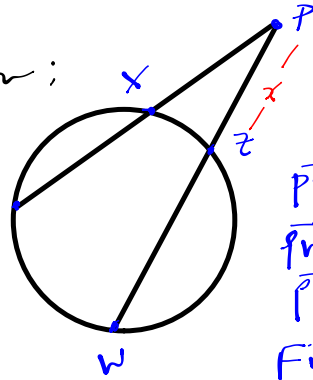


$$\overline{XW} \cdot \overline{WZ} = \overline{YW} \cdot \overline{WU}$$



$$\underline{m\overline{PA} \times m\overline{PB} = m\overline{PC} \times \overline{PD}}$$

Question:



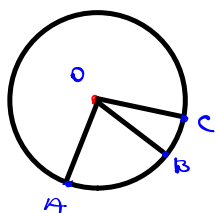
$$\overline{PX} \cdot \overline{PY} = \overline{PZ} \cdot \overline{PW}$$

$$\frac{5 \cdot 5 \times 12.75}{16.5} = \frac{x \cdot 16.5}{16.5}$$

$\overline{PY} = 12.75$
 $\overline{PW} = 16.5$
 $\overline{PX} = 5.5$
 Find \overline{PZ} .

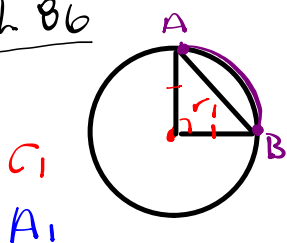
$$x = 4.75$$

Th 84

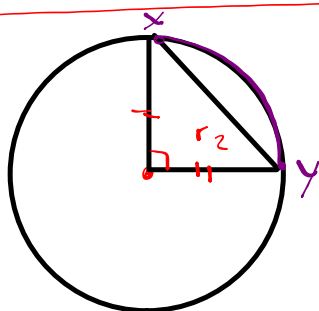


$$\frac{m\angle AOB}{m\angle BOC} = \frac{\widehat{AB}}{\widehat{BC}}$$

Th 86



C_1
 A_1



C_2 A_2

$$\widehat{AB} \sim \widehat{XY}$$

$$\frac{\widehat{AB}}{\widehat{XY}} = \frac{r_1}{r_2}$$

Th 86

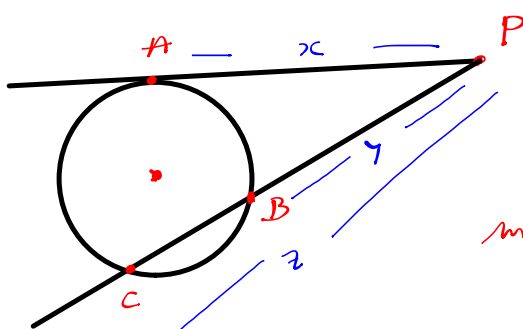
$$\frac{C_1}{C_2} = \frac{r_1}{r_2}$$

Th 87

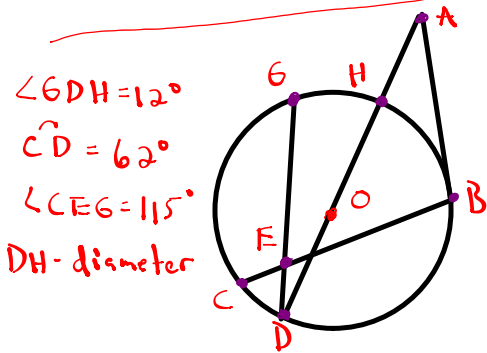
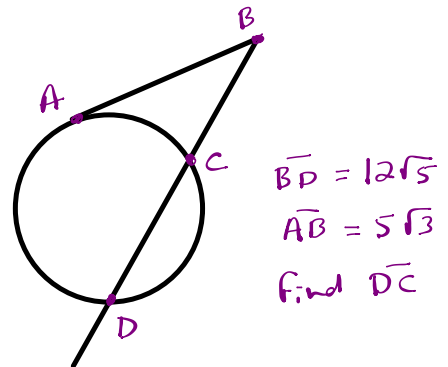
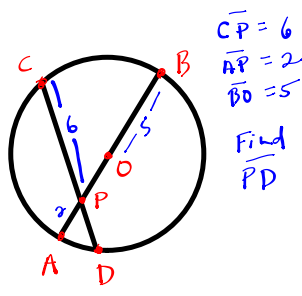
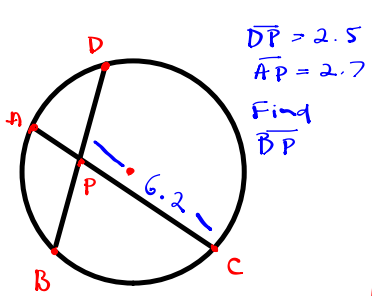
$$\frac{A_1}{A_2} = \left(\frac{r_1}{r_2}\right)^2$$

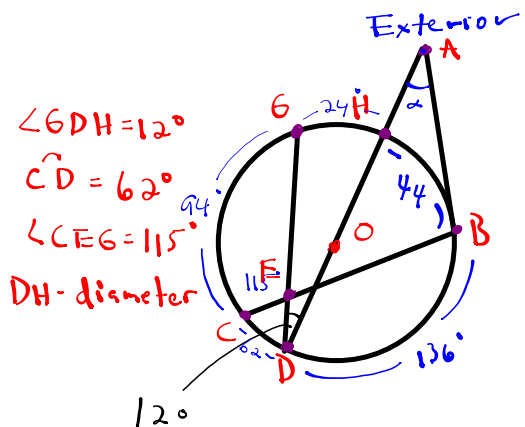
$$\frac{A_1}{A_2} = \frac{r_1^2}{r_2^2}$$

th 83



$$m\overline{PA}^2 = m\overline{PB} \cdot m\overline{PC}$$





$\angle GDH = 12^\circ$
 $\widehat{CD} = 62^\circ$
 $\angle CEG = 115^\circ$
 DH - diameter
 120°

Find
 $\angle DAB$
 and $\widehat{CG} = 94^\circ$ Th 69
 $180 - 24^\circ - 62^\circ$

Th 77 $\widehat{GH} = 24^\circ$

Th 79
 $\angle DAB = \frac{1}{2}(\widehat{BD} - \widehat{HB})$
 $\angle DAB = \frac{1}{2}(136^\circ - 44^\circ)$
 $\angle DAB = 46^\circ$

Th 78
 $\angle GEC = \frac{1}{2}(\widehat{CG} + \widehat{BD})$
 $115^\circ = \frac{1}{2}(94^\circ + \widehat{BD})$
 $\widehat{BD} = 136^\circ$